Determination of Rangeland Health

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these Standards.

Field assessment worksheets and other available data which evaluate the local indicators, were completed for this allotment. Based on the assessments, it is my determination:

1. Public Lands within the Bosque Grande Allotment #65020 South Main pasture do not meet the Upland and Biotic Standards; and 2. The remaining Public Lands within the Bosque Grande Allotment #65020 meet the Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) the Riparian Standard (on identified sites).

/s/ T. R. KREAGER	08/28/2003
Assistant Field Manager	Date

Standards of Public Land Health
Evaluation of 65020 BOSQUE GRANDE Allotment
[02/11/2003]

The Roswell Field Office conducted rangeland health assessments at nine study sites within Allotment no. 65020, Bosque Grande. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
65020-MIDDLE-D055	X			X			N/A		
65020-NORTH MAIN-D048 (*)	X	*		X			N/A		
65020-RIVER EAST#1-D050	X			X			X	*	
65020-RIVER EAST#2 - N021 (*)	X			X	*		X	*	
65020-RIVER WEST #2-N023 (*)	X	*		X	*		X	*	
65020-RIVER WEST #3-N024 (*)	X	*		X			N/A		
65020-RIVER WEST#1 - F216 (*)	X			X	*		X	*	
65020-SOUTH MAIN-N022 (*)		*	X			X	N/A		
65020-WHISKEY-	X	*		X	*		N/A		

D049 (*)									

Twenty-two (22) indicators for Rangeland Health were evaluated for the Bosque Grande allotment, #65020; 10 of these assessed soil/site stability, 11 assessed hydrologic functions and 13 assessed biotic integrity. These qualitative assessments along with quantitative information from long-term monitoring studies on nine study areas on the allotment were utilized to assess the rangeland health of the public land within the allotment. These quantitative evaluations were performed by the Roswell Field office staff starting in the early 1980's. These included ground and vegetative cover and composition, production, frequency, and ecological condition as calculated from these collections which have been scheduled approximately every five years.

While drought over the past three years has had an impact on these sites, the assessments of the indicators range from Moderate/Extreme to Slight to None. Six sites had some indicators rated as Moderate to Extreme. Portions of these sites are hummocky sands that are shrub dominated.

Much of the North Main Pasture is classified as aTorriorthents-Philder-Rock Outcrop soil association (TPD) that is moderately steep and broken and drains into Bosque Draw. The side slopes of the draw are geologically eroded drainages. No distinct ecogical site is dominant; on the uplands are pockets of Gravelly, Gyp Uplands and Loamy SD-3 sites. In the bottom is Bosque Draw; the upper and middle reaches of the draw are barren alluvial deposits while the lower portion of the draw grades into a deep soil supporting a Bottomland SD-3 site very similar to the sites on the upper terrace of the floodplain.

The Pajarito-Bluepoint (PBB) and Sotim-Berino (SMA) soil associations in the Middle, South Main and Whiskey Pastures are fine sandy soils. The Pajarito-Bluepoint soils are naturally hummocky and eroded soils. In some areas head cuts are occurring; the deeper older gullies support vegetation on the bottoms and sides. The road going across the slope in the South Main pasture is contributing to headcuts and gullying by channelizing water flow during peak periods.

The Ytubide loamy sand (YtC) in the West River Pasture is also a hummocky and eroded soil. This is on the upper terrace just above the floodplain and has headcuts leading to older gullies; this is due to the steeper slopes above the floodplain.

These sandy soils are excessively drained and have low waterholding capacity that have affected the vegetation during the prior drought.

The East River pasture and a portin of the West River pasture are within the floodplain of the Pecos River. A road running north-south in the East River pasture intercepts and channelizes overland water flow. In some areas this has contributed to some localized gullying.

Mesquite is common on the sandy soils and is affecting the hydrology (infiltration) of these sites. The floodplain areas have both mesquite and salt cedar; this affects both the hydrology and biotic ratings.

There are two habitat types of concern. The grass/shrub bottomlands of the Pecos River is degraded due to the invasion of mesquite. Riparian and floodplain habitat along the river is degraded due to the invasion of saltcedar. It is expected that a shift from grassland wildlife species to shrubland species has occurred. Riparian habitat is less that ideal for numerous terrestrial species due to saltcedar invasion. Species of concern include mule deer, upland game birds, and various terrestrial nongame species.

In general, due to the hydrologic control of the river from agricultural demands, the aquatic habitat is stabilized although not in the best condition for aquatic species. Control of water in the river is not within the purview of the BLM. Riparian habitat is generally good but can be improved.

There has been an increase in oil and gas exploration and drilling activities within the last two years. Currently no adverse affects from these new activities have been noted. The infrastructure (i.e. roads and gathering facilities) associated with the older O&G developments have affected the surface runoff in some areas by channelizing surface flow during peak precipitation events. Conditions within the South pasture are a concern. Quanitative data is limited (the study was established in 2001); the qualitative assessment based on the preponderance of the indicator ratings for the soils, hydrology and biotic attributes place this area in the low moderate to the moderate/extreme range on the rating scale. In addition to the affects of the drought the area hydrology (ie channelization of runoff, gulleying etc) has been affected by the county road that goes across the area. Coppice dunes with mesquite ocupy much of this site and the low herbaceous cover within inter-dunal areas contribute runoff and erosion patterns of the site. The team feels this site does not meet the Upland and Biotic standards; the Riparian standard does not apply.

In the opinion of the team, the other sites within the allotment meet the Upland and Biotic standards. The areas designated as having riparian area meet the Riparian standard but have the potential for improvement with the implementation of treatments to control/reduce brush species.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Pedestals and/or Terracettes
- Bare Ground
- Soil Surface Resistance to Erosion
- Soil Surface Loss or Degradation
- Plant Community Composition and Distribution Relative to Infiltration and Runoff
- Annual Production

- Invasive Plants
- Wildlife Habitat
- Wildlife Populations

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: Continue development and implementation of Allotment Management Plan, which outlines range improvement projects and grazing management practices to improve and maintain rangeland and riparian health.

A water pipeline and storage system is being planned currently to provide for a more dependable water source and to supplement the dirt tanks that are in use.

Additional salt cedar/mesquite treatments are being planned in the bottomland areas along the Pecos River.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-MIDDLE-D055			
Legal Land Desc	NWNW 4 0070S 0260E Meridian 23	Acreage	587
Ecosite		Photo Taken	Y
Watershed	13060003220 FILLMORE		
Observers	SPAIN/BAGGAO	Observation Date	04/03/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	PBB	Soil Taxon Name	PAJARITO
Texture Class	NM644 FSL	Soil Phase	PAJARITO-BLUEPOINT
Texture Modifier	NM644 FINE SANDY LOAM,HU		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:	Light grazing use		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		

Comments:	Per cent of bare ground is less than study data depicts					
S H	Gullies			X		
Comments:	To be expected, land form break above the flood plain to west					
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:						
S H B	Soil Surface Loss or Degradation			X		
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants			X		
Comments:	Mesquite and snakeweed					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Both physical and biological crust observed					

B	Wildlife Habitat				X	
Comments:	This is an upland grassland habitat type which includes the breaks to the valley bottom. There are numerous drainages trending west toward the bottomland. Grassland habitat has been invaded by mesquite. Wildlife species of concern include mule deer, upland game bird, and various terrestrial nongame species.					
B	Wildlife Populations				X	
Comments:	No information is available on specific wildlife populations at this time. It is expected that a shift from grassland wildlife species to those that prefer shrubs in the habitat has occurred. The diversity of wildlife species is enhanced by the drainages that serve as microhabitats and corridors between the uplands and bottomlands.					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	5	3	2
H	Hydrologic	0	0	5	4	2
B	Biotic	0	0	5	3	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	5	5
Hydrologic		0	5	6
Biotic		0	5	8
Site Notes: The soil association Pajarito-Bluepoint (PBB) is an eroded soil. Gulleying and hummocks are common with this soil, particularly in the Bluepoint soils to the southwest of the site. The site also has Shallow Sand sites on the low ridges within this area.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-NORTH MAIN-D048			
Legal Land Desc	NWSE 22 0060S 0260E Meridian 23	Acreage	3153
Ecosite		Photo Taken	N
Watershed	13060003190 CROCKETT		
Observers	SPAIN & BAGGAO	Observation Date	02/11/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RBA	Soil Taxon Name	RATLIFF
Texture Class	NM644 L	Soil Phase	RATLIFF-REDONA
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:	Study site is about 40 yards from a functional livestock water. Trailing throughout the vicinity of the area. About 30 head of livestock are at the trough.		

Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Toward slight, more pronounced on slopes toward draw or river.					

S H	Pedestals and/or Terracettes				X	
Comments:	Toward slight, some evidence of past pedestalling.					
S H	Bare Ground		X			
Comments:	Exceed with an improving trend.					
S H	Gullies			X		
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:						
S H B	Soil Surface Loss or Degradation			X		
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Mesquite invading site, higher than expected. Javelina bush heavy in spots (transitional).					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Lower end of range.					
B	Annual Production			X		
Comments:						
B	Invasive Plants			X		
Comments:	Mesquite and snakeweed.					
B	Reproductive Capability of Perennial Plants					X

Comments:						
S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat					X
Comments:	This habitat type is a combination of grasslands with a shrubby component at the higher elevations, numerous drainages including Bosque Draw, the breaks between the uplands and bottomlands, and a portion of the Pecos River floodplain Wildife habitat is diverse with a mosaic of vegetation types. Impacts to habitat is primarily from oil and gas development at this time.					
B	Wildlife Populations					X
Comments:	No specific willdlife population information but it is expected that a shift toward shrubland species has occurred. Wildlife species diversity is expected to be high due the various habitat types within this large pasture. Species of concern include mule deer, upland game birds and numerous terrestrial nongame species. The drainages serve as microhabitats and corridors between the bottomlands and uplands.					
B	Special Status Species Habitat					X
Comments:	No known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	3	3	3
H	Hydrologic	0	1	3	5	2
B	Biotic	0	0	4	2	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the

determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		1	3	6
Hydrologic		1	3	7
Biotic		0	4	9

Site Notes: Revisit soil descriptions and map units in the office. Followup - changes made to soil description and reflected in this assessment.

Bosque Draw constitutes a major area within the site being evaluated. The site is at the top of the valley break of the Pecos River.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-RIVER EAST#1-D050			
Legal Land Desc	NWNE 33 0060S 0260E Meridian 23	Acreage	31
Ecosite		Photo Taken	Y
Watershed	13060003220 FILLMORE		
Observers	BAGGAO/SPAIN	Observation Date	02/11/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	GPA	Soil Taxon Name	GLENDALE
Texture Class	NM644 L	Soil Phase	GLENDALE-PECOS-HARKEY
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						

S H	Bare Ground				X	
Comments:	Toward moderate with upward trend					
S H	Gullies				X	
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:						
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Mesquite invasion					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:						
B	Annual Production			X		
Comments:	Mesquite and giant sacaton arpredominant					
B	Invasive Plants			X		
Comments:						
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts				X	

Comments:	Trend toward slight					
B	Wildlife Habitat			X		
Comments:	There a two habitat types of importance, the riparian habitat along the Pecos River and the floodplain grassland habitat type. In general, both habitat types are degraded due to the invasion of saltcedar and mesquite. The riparian habitat directly along the river is in good condition. Upper terraces of the floodplain are dryer and several invasive species are present. Habitat diversity is high due to the river. An aquatic habitat component can be considered as well.					
B	Wildlife Populations			X		
Comments:	Because of the invasion of saltcedar and mesquite, a shift of wildlife species that prefer relatively open grasslands within the floodplain of the river has occurred toward those species that prefer or tolerate a shrubby component. No specific population data is available at this time but a breeding bird survey is being conducted in the area. The study is not complete. It is expected that use of the riparian/floodplain habitat by numerous wildlife species is higher that the surrounding uplands. The potential for improving native wildlife species populations is high.					
B	Special Status Species Habitat					X
Comments:	None known to occur (this excludes the riparian and aquatic area).					
B	Special Status Species Populations					X
Comments:	None known to occur (this excludes the riparian and aquatic area).					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	7	3
H	Hydrologic	0	0	0	8	3
B	Biotic	0	0	4	5	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns.

Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	0	10
Hydrologic		0	0	11
Biotic		0	4	9

Site Notes: Wildlife - This pasture includes the floodplain of the Pecos River and associated riparian habitat. The west boundary of the pasture follows portions of the east bank of the river. The fence is in disrepair at several locations. Wildlife assessments included the river as the fence does not impede wildlife movement. The bottomland habitat type can be improved through vegetation manipulation projects to favor native grassland and riparian species. A majority of this pasture is private land. Other impacts to wildlife habitat include roads and oil and gas developments.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-RIVER EAST#2 -N021			
Legal Land Desc	NESW 33 0060S 0260E Meridian 23	Acreage	91
Ecosite		Photo Taken	Y
Watershed	13060003220 FILLMORE		
Observers	BAGGAO/SPAIN	Observation Date	02/13/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	GPA	Soil Taxon Name	GLENDALE
Texture Class	NM644 SL	Soil Phase	GLENDALE-PECOS-HARKEY
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns					X
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:	Toward slight					

S H	Bare Ground				X	
Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:						
S H B	Soil Surface Resistance to Erosion					X
Comments:						
S H B	Soil Surface Loss or Degradation					X
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer				X	
Comments:						
B	Functional/Structural Groups			X		
Comments:	Lacking the giant sacaton; mesquite invasion.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:	Mostly standing litter & not in contact with the ground.					
B	Annual Production		X			
Comments:	Lack of the giant sacaton component is is affecting the annual production rating.					
B	Invasive Plants		X			
Comments:	Mesquite and salt cedar is common					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological			X		

	Crusts					
Comments:						
B	Wildlife Habitat				X	
Comments:	There are two habitat types of importance, the riparian habitat along the Pecos River and the floodplain grassland habitat type. In general, both habitat types are degraded due to the invasion of saltcedar and mesquite. The riparian habitat directly along the river is in good condition. Upper terraces of the floodplain are dryer and several invasive species are present. Habitat diversity is high due to the river. An aquatic habitat component can be considered as well.					
B	Wildlife Populations			X		
Comments:	Because of the invasion of saltcedar and mesquite, a shift of wildlife species that prefer relatively open grasslands within the floodplain of the river has occurred toward those species that prefer or tolerate a shrubby component. No specific population data is available at this time but a breeding bird survey is being conducted in the area. The study is not complete. It is expected that use of the riparian/floodplain habitat by numerous wildlife species is higher that the surrounding uplands. The potential for improving native wildlife species populations is high.					
B	Special Status Species Habitat			X		
Comments:	The Pecos River with its associated riparian and aquatic habitat may provide for several species of concern, including the Pecos bluntnose shiner and Pecos sunflower, and numerous neotropical migrants birds species. In general, due to the hydrologic control of the river from agricultural demands, the aquatic habitat is stabilized although not in the best condition for aquatic species. Control of water in the river is not within the purview of the BLM. Riparian habitat is generally good but can be improved.					
B	Special Status Species Populations			X		
Comments:	Pecos bluntnose shiner populations have been monitored in the past by the US Fish and Wildlife Service. Data indicate a stable population with the exception of when the river goes dry due to manipulation of flows at Ft. Sumner Dam. A breeding bird survey is being conducted and is not complete at this time. No sunflower populations have been found to date.					
Part 3. Summary						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	3	6
H	Hydrologic	0	0	1	4	6
B	Biotic	0	2	5	3	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	1	9
Hydrologic		0	1	10
Biotic		2	5	6

Site Notes: This site has both mequite and salt cedar problems. The road paralling the eastern vally is affecting the overland flows reaching portions of the flood plain. The roads intercept and channel flows to other areas.

Wildlife - This pasture includes the floodplain of the Pecos River and associated riparian habitat. The west boundary of the pasture follows portions of the east bank of the river. The fence is in disrepair at several locations. Wildlife assessments included the river as the fence does not impede wildlife movement. The bottomland habitat type can be improved through vegetation manipulation projects to favor native grassland and riparian species. A majority of this pasture is private land. Other impacts to wildlife habitat include roads and oil and gas developments.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-RIVER WEST #2-N023			
Legal Land Desc	NESE 20 0060S 0260E Meridian 23	Acreage	320
Ecosite		Photo Taken	Y
Watershed	13060003200 FIVE MILE		
Observers	BAGGAO/SPAIN	Observation Date	03/21/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	GPA	Soil Taxon Name	GLENDALE
Texture Class	NM644	Soil Phase	GLENDALE-PECOS-HARKEY
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns					X
Comments:	Slight					
S H	Pedestals and/or Terracettes					X
Comments:						

S H	Bare Ground				X	
Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:						
S H B	Soil Surface Resistance to Erosion					X
Comments:						
S H B	Soil Surface Loss or Degradation					X
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Mesquite invasion					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	The expected giant sacaton has been replaced with alkali sacaton; fourwing saltbush is missing from the site					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants		X			
Comments:	Mesquite is common					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological				X	

	Crusts					
Comments:	More of a physical crust					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	Shift toward shrubland species					
B	Special Status Species Habitat			X		
Comments:	Avifauana & aquatic species along the Pecos River. Salt cedar encroachment.					
B	Special Status Species Populations			X		
Comments:	Avifauana & aquatic species along the Pecos River. Salt cedar encroachment.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	2	8
H	Hydrologic	0	0	1	2	8
B	Biotic	0	1	5	3	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	0	10

Hydrologic		0	1	10
Biotic		1	5	7

Site Notes: Mesquite and salt cedar encroachment is occurring thru out this site. The area is targeted for control efforts in FY2004.

Wildlife - This pasture includes the floodplain of the Pecos River and associated riparian habitat. The Pecos River is centrally located in the pasture in the vicinity of this study site. The bottomland habitat type can be improved through vegetation manipulation projects to favor native grassland and riparian species. A majority of the Pecos River this pasture is public land. Recently, a riparain pasture fence was constructed to divide this large pasture into two units, and to allow periodic rest of the public lands along the Pecos River from livestock grazing. Other impacts to wildlife habitat include roads and oil and gas developments. A major pipeline ROW diagonally crosses this pasture.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-RIVER WEST #3-N024			
Legal Land Desc	NENW 32 0060S 0260E Meridian 23	Acreage	904
Ecosite		Photo Taken	Y
Watershed	13060003200 FIVE MILE		
Observers	BAGGAO/SPAIN	Observation Date	03/21/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	YtC	Soil Taxon Name	YTURBIDE
Texture Class	NM644 LS	Soil Phase	YTUTBIDE
Texture Modifier	NM644 LOAMY SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills			X		
Comments:						
S H	Water Flow Patterns			X		
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:						
S H	Bare Ground			X		
Comments:						

S H	Gullies			X		
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:						
H	Litter Movement			X		
Comments:						
S H B	Soil Surface Resistance to Erosion		X			
Comments:						
S H B	Soil Surface Loss or Degradation		X			
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff		X			
Comments:	Moderat, easily could be tipped toward moderate-extreme					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Snakeweed, mesquite & three-awn					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants		X			
Comments:	Mesquite hummocks are common within the site					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat				X	

Comments:	Upland habitat type on breaks above Pecos River floodplain. Numerous drainages on a gravelly site supporting primarily mixed desert shrub. Oil and gas activity increasing.					
B	Wildlife Populations				X	
Comments:	No specific population information. Species of concern primarily upland game birds and nongame terrestrial species. Drainages may support more diversity due to corridor connecting uplands and bottomlands.					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	2	6	0	2
H	Hydrologic	0	3	6	1	1
B	Biotic	0	3	2	4	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		2	6	2

Hydrologic		3	6	2
Biotic		3	2	8
Site Notes: This site occurs in a narrow band on the upper slope area adjacent to the flood plain area. Gullies and rills are common to this soil and slope.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-RIVER WEST#1 -F216			
Legal Land Desc	SWNE 32 0060S 0260E Meridian 23	Acreage	200
Ecosite		Photo Taken	N
Watershed	13060003200 FIVE MILE		
Observers	BAGGAO/SPAIN	Observation Date	03/21/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	GPA	Soil Taxon Name	GLENDALE
Texture Class	NM644 L	Soil Phase	GLENDALE-PECOS-HARKEY
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:	Light Livestock use.		

Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:						

S H	Bare Ground				X	
Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:						
S H B	Compaction Layer				X	
Comments:						
B	Functional/Structural Groups			X		
Comments:	Salt cedar is the main shrub/tree					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants		X			
Comments:	Salt cedar					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts				X	

Comments:	Salty crust could be due to salt cedar					
B	Wildlife Habitat		X			
Comments:	Floodplain area comprised of alkali sacaton and dense salt cedar 10 - 15 feet high. Pecos River supporting riparian and aquatic habitat.					
B	Wildlife Populations			X		
Comments:	Because of the invasion of saltcedar and mesquite, a shift of wildlife species that prefer relatively open grasslands within the floodplain of the river has occurred toward those species that prefer or tolerate a shrubby component. No specific population data is available at this time but a breeding bird survey is being conducted in the area. The study is not complete. It is expected that use of the riparian/floodplain habitat by numerous wildlife species is higher that the surrounding uplands. The potential for improving native wildlife species populations is high.					
B	Special Status Species Habitat			X		
Comments:	The Pecos River with its associated riparian and aquatic habitat may provide for several species of concern, including the Pecos bluntnose shiner and Pecos sunflower, and numerous neotropical migrants birds species. In general, due to the hydrologic control of the river from agricultural demands, the aquatic habitat is stabilized although not in the best condition for aquatic species. Control of water in the river is not within the purview of the BLM. Riparian habitat is generally good but can be improved.					
B	Special Status Species Populations			X		
Comments:	Pecos bluntnose shiner populations have been monitored in the past by the US Fish and Wildlife Service. Data indicate a stable population with the exception of when the river goes dry due to manipulation of flows at Ft. Sumner Dam. A breeding bird survey is being conducted and is not complete at this time. No sunflower populations have been found to date.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	6	3
H	Hydrologic	0	0	2	6	3
B	Biotic	0	2	5	4	2

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	1	9
Hydrologic		0	2	9
Biotic		2	5	6

Site Notes: This area is on the outer fringe of the flood plain. The mapped soils show a mixture of USA and GPA soil map units. Typically these soils support a Bottomland SD-3 ecological site, however, there may be some Salty Bottomland SD-3 inclusions.

The area is infested with heavy concentrations of salt cedar. Areas closer to the river support more desirable shrub species and some cottonwood groves.

Wildlife - This pasture includes the floodplain of the Pecos River and associated riparian habitat. The east boundary of the pasture follows portions of the east bank of the river. The fence is in disrepair at several locations. The bottomland habitat type can be improved through vegetation manipulation projects to favor native grassland and riparian species. A majority of the Pecos River this pasture is public land. Recently, a riparain pasture fence was constructed to divide this large pasture into two units, and to allow periodic rest of the public lands along the Pecos River from livestock grazing. Other impacts to wildlife habitat include roads and oil and gas developments.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-SOUTH MAIN-N022			
Legal Land Desc	SWNE 35 0060S 0260E Meridian 23	Acreage	719
Ecosite		Photo Taken	Y
Watershed	13060003220 FILLMORE		
Observers	SPAIN/BAGGAO	Observation Date	04/03/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	SMA	Soil Taxon Name	SOTIM
Texture Class	NM644 FSL	Soil Phase	SOTIM-BERINO
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:	Light grazing use		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills				X	
Comments:	This upland site is mostly mesquite scrub and numerous drainages. Wildlife habitat is degraded from the loss of other vegetation in what could be an upland grassland type.					
S H	Water Flow Patterns			X		
Comments:						
S H	Pedestals and/or Terracettes		X			

Comments:						
S H	Bare Ground		X			
Comments:						
S H	Gullies			X		
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:						
H	Litter Movement			X		
Comments:						
S H B	Soil Surface Resistance to Erosion		X			
Comments:						
S H B	Soil Surface Loss or Degradation			X		
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:						
S H B	Compaction Layer					X
Comments:	N/A					
B	Functional/Structural Groups			X		
Comments:	Mesquite invasion					
B	Plant Mortality/Decadence				X	
Comments:						
H B	Litter Amount			X		
Comments:						
B	Annual Production		X			
Comments:						
B	Invasive Plants		X			
Comments:	Mesquite hummocks are common					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological					X

	Crusts					
Comments:	N/A					
B	Wildlife Habitat		X			
Comments:	Mesquite invasion predominates site over desirable shrubs such as four wing saltbush and sumac					
B	Wildlife Populations		X			
Comments:	Wildlife populations are limited to those species that prefer or can tolerate mesquite scrub. Mule deer may traverse the area, upland game birds may also favor this area. In general, wildlife species numbers and diversity is low due to the change in the vegetation community, basically more monotypic than what could be expected for the site.					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	3	4	1	2
H	Hydrologic	0	3	6	1	1
B	Biotic	0	5	3	2	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		3	4	3
Hydrologic		3	6	2
Biotic		5	3	5

Site Notes: The soils on this site are sandy and subceptable to erosion. The east-west road cuts across the site and affects the overland hydrologic water flows. The road channelizes the water flow to the south and adding to gulley erosion during major precipitation events.

Wildlife - The upland gravelly inclusions support a different plant community which include species that are favorable and palatable by wildlife. These sites are found on the hilly terrain versus the rolling mesquite hummocks. This pasture is almost equally divided BLM and State land. the area is generally located between the uplands above the river valley and the even higher escarpment to the west referred to as the Haystack Mountain area.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65020-WHISKEY-D049			
Legal Land Desc	NWSW 3 0070S 0260E Meridian 23	Acreage	54
Ecosite		Photo Taken	Y
Watershed	13060003220 FILLMORE		
Observers	SPAIN & BAGGAO	Observation Date	02/13/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	SMA	Soil Taxon Name	SOTIM
Texture Class	NM644 FSL	Soil Phase	SOTIM-BERINO
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.65	NOAA Growing Season Precipitation	8.4
NOAA Avg Annual Precipitation	13.17	NOAA Avg Growing Season Precipitation	10.83
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:	Upward trend (ocular).					
S H	Bare Ground		X			

Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Upward Trend					
S H B	Soil Surface Loss or Degradation			X		
Comments:	Upward Trend					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants			X		
Comments:	Mesquite					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical					

B	Wildlife Habitat			X		
Comments:	This is an upland grassland/shrubland habitat type which includes the breaks to the valley bottom. There are numerous drainages trending west toward the bottomland. Grassland habitat has been invaded by mesquite. Wildlife species of concern include mule deer, upland game bird, and various terrestrial nongame species.					
B	Wildlife Populations				X	
Comments:	No information is available on specific wildlife populations at this time. It is expected that a shift from grassland wildlife species to those that prefer shrubs in the habitat has occurred. The diversity of wildlife species is enhanced by the drainages that serve as microhabitats and corridors between the uplands and bottomlands.					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

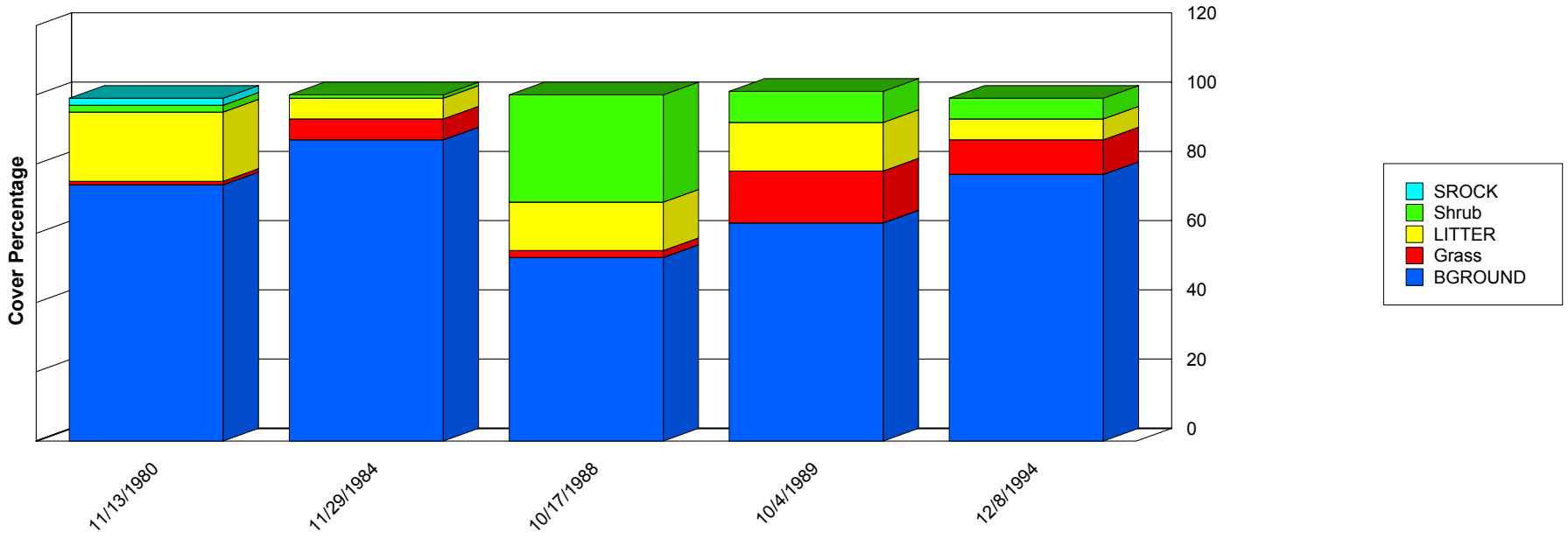
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	3	2	4
H	Hydrologic	0	1	4	3	3
B	Biotic	0	0	6	2	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		1	3	6
Hydrologic		1	4	6
Biotic		0	6	7
Site Notes:				

Ground Cover Trends



	11/13/1980	11/29/1984	10/17/1988	10/4/1989	12/8/1994
BGROUND	74.00	87.00	53.00	63.00	77.00
Grass	1.00	6.00	2.00	15.00	10.00
LITTER	20.00	6.00	14.00	14.00	6.00
Shrub	2.00	1.00	31.00	9.00	6.00
SROCK	2.00	0.00	0.00	0.00	0.00
Total	99.00	100.00	100.00	101.00	99.00

Report Parameters

SITE NAME LIKE	65020-MIDDLE-D055
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

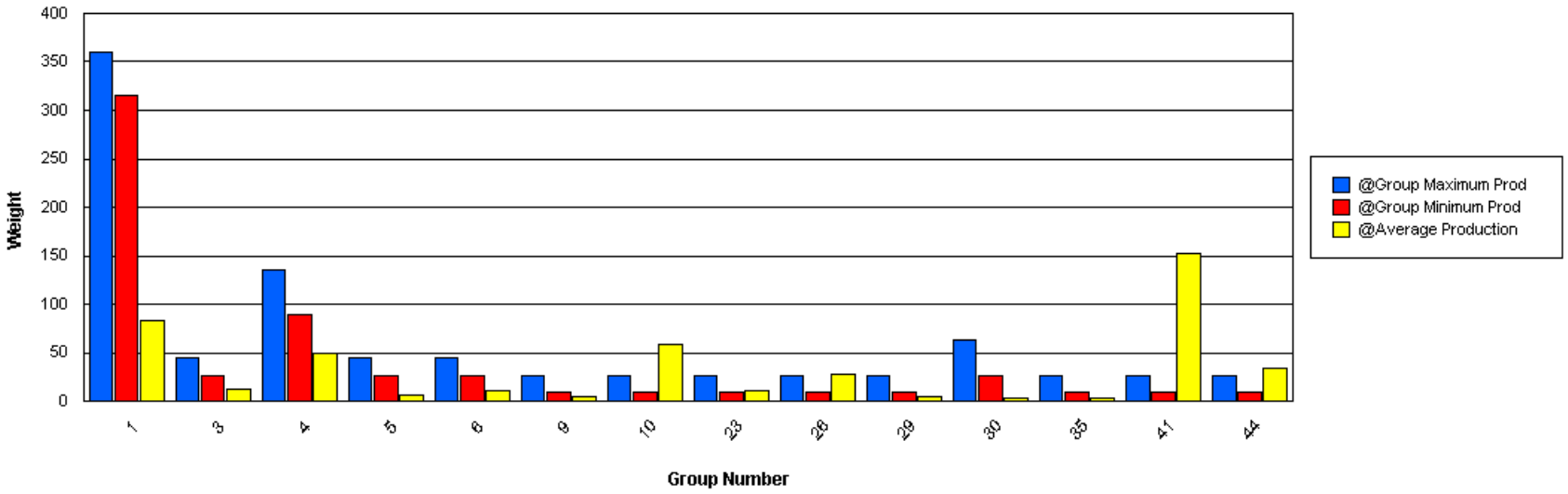
Functional / Structural Groups

Report Parameters

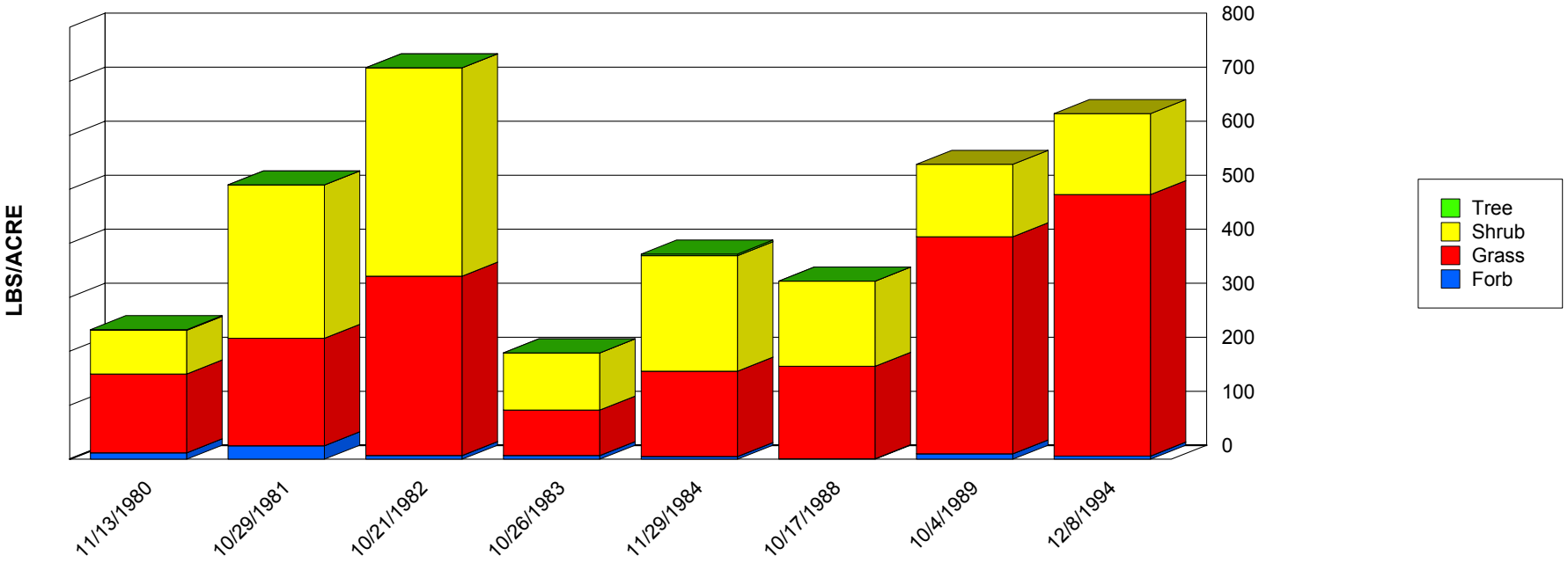
SITE NAME LIKE	65020-MIDDLE-D055
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY004NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	315	360	1.00	226.00	83.50	79.59
2	Grass	BOGR2	45	90	0.00	12.00	2.14	4.16
3	Grass	MUPO2	27	45	0.00	62.00	12.43	21.25
4	Grass	SPCO4	90	135	0.00	17.00	5.00	6.88
4	Grass	SPCR	90	135	13.00	104.00	44.63	25.23
5	Grass	ARIST	27	45	0.00	29.00	7.25	10.28
6	Grass	SEMA5	27	45	0.00	66.00	11.00	24.60
9	Grass	PAOB	9	27	0.00	18.00	4.71	6.98
10	Grass	HIJA	9	27	0.00	21.00	6.33	9.03
10	Grass	HIMU2	9	27	0.00	116.00	52.40	44.69
22	Grass	MUAR	9	27	0.00	5.00	1.25	2.17
23	Grass	MUAR2	9	27	0.00	33.00	11.75	13.45
26	Grass	SCBR2	9	27	0.00	136.00	28.25	41.61
29	Grass	ERPU8	9	27	0.00	12.00	4.38	4.12
29	Grass	TRPI2	9	27	0.00	1.00	0.33	0.47
30	Forb	CROTO	27	63	0.00	7.00	3.67	2.29
30	Forb	CRPO5	27	63	0.00	1.00	0.17	0.37
30	Forb	MELE2	27	63	0.00	2.00	0.33	0.75
32	Forb	LESQU	27	63	0.00	4.00	1.00	1.53
34	Forb	AAFF	27	63	0.00	3.00	1.13	1.17
34	Forb	PECTI	27	63	0.00	0.00	0.00	0.00
34	Forb	XADR	27	63	0.00	9.00	1.83	3.29
35	Forb	CHAMA8	9	27	0.00	3.00	0.75	1.30
35	Forb	PENA	9	27	0.00	7.00	2.14	2.47
35	Forb	PPFF	9	27	0.00	0.00	0.00	0.00
35	Forb	SOEL	9	27	0.00	1.00	0.20	0.40

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
37	Tree	YUEL	9	45	0.00	3.00	0.67	1.11
39	Shrub	ATCA2	9	27	0.00	8.00	1.67	2.92
40	Shrub	COER5	9	27	0.00	11.00	2.75	4.76
41	Shrub	GUSA2	9	27	50.00	385.00	152.50	115.38
42	Shrub	DAFO	9	27	0.00	3.00	0.50	1.12
44	Shrub	PRGL2	9	27	0.00	99.00	33.50	37.54



Production Lbs/Acre Trends

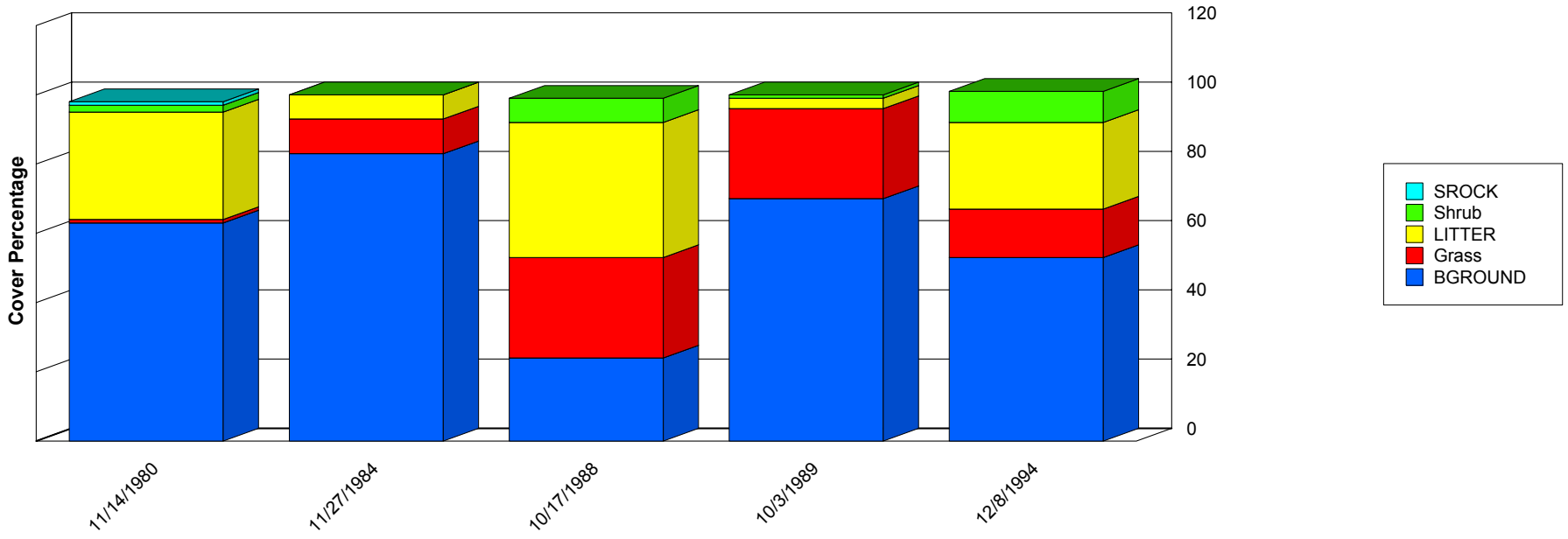


	11/13/1980	10/29/1981	10/21/1982	10/26/1983	11/29/1984	10/17/1988	10/4/1989	12/8/1994
Forb	**12.00**	**25.00**	**7.00**	**7.00**	**5.00**	**1.00**	**10.00**	**6.00**
Grass	**146.00**	**199.00**	**332.00**	**84.00**	**158.00**	**171.00**	**402.00**	**484.00**
Shrub	**81.00**	**284.00**	**386.00**	**106.00**	**214.00**	**158.00**	**134.00**	**150.00**
Tree	**1.00**	**0.00**	**0.00**	**0.00**	**3.00**	**0.00**	**0.00**	**0.00**
Total	**240.00**	**508.00**	**725.00**	**197.00**	**380.00**	**330.00**	**546.00**	**640.00**

Report Parameters

SITE NAME LIKE	65020-MIDDLE-D055
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Ground Cover Trends



	11/14/1980	11/27/1984	10/17/1988	10/3/1989	12/8/1994
BGROUND	63.00	83.00	24.00	70.00	53.00
Grass	1.00	10.00	29.00	26.00	14.00
LITTER	31.00	7.00	39.00	3.00	25.00
Shrub	2.00	0.00	7.00	1.00	9.00
SROCK	1.00	0.00	0.00	0.00	0.00
Total	98.00	100.00	99.00	100.00	101.00

Report Parameters

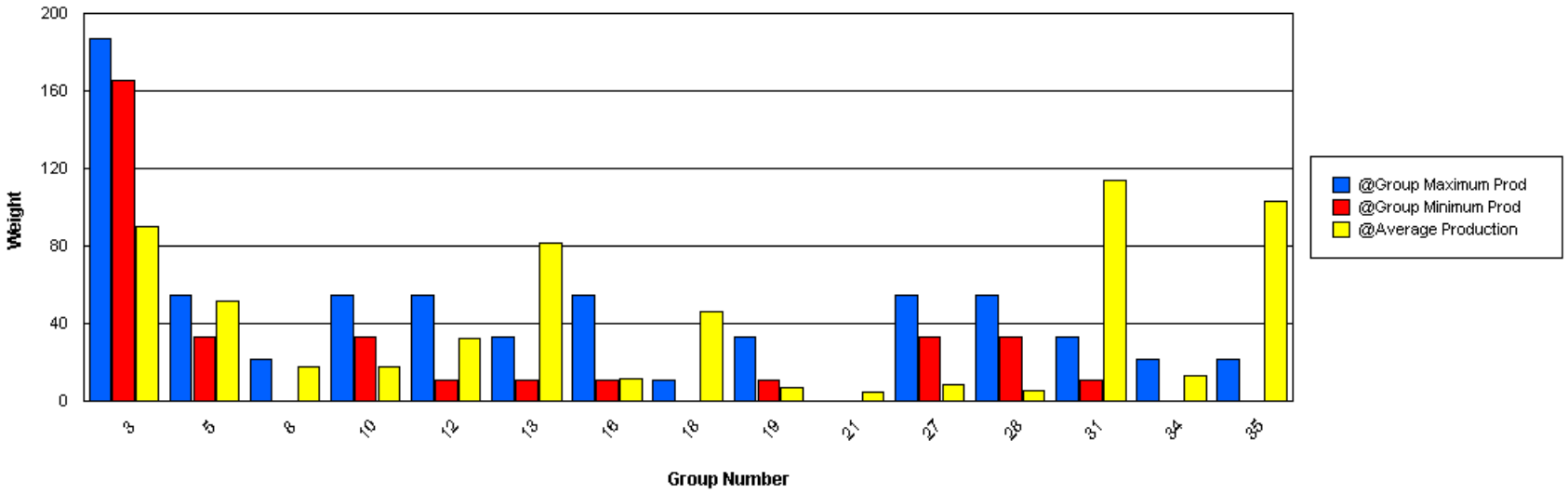
SITE NAME LIKE	65020-NORTH MAIN-D048
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Functional / Structural Groups

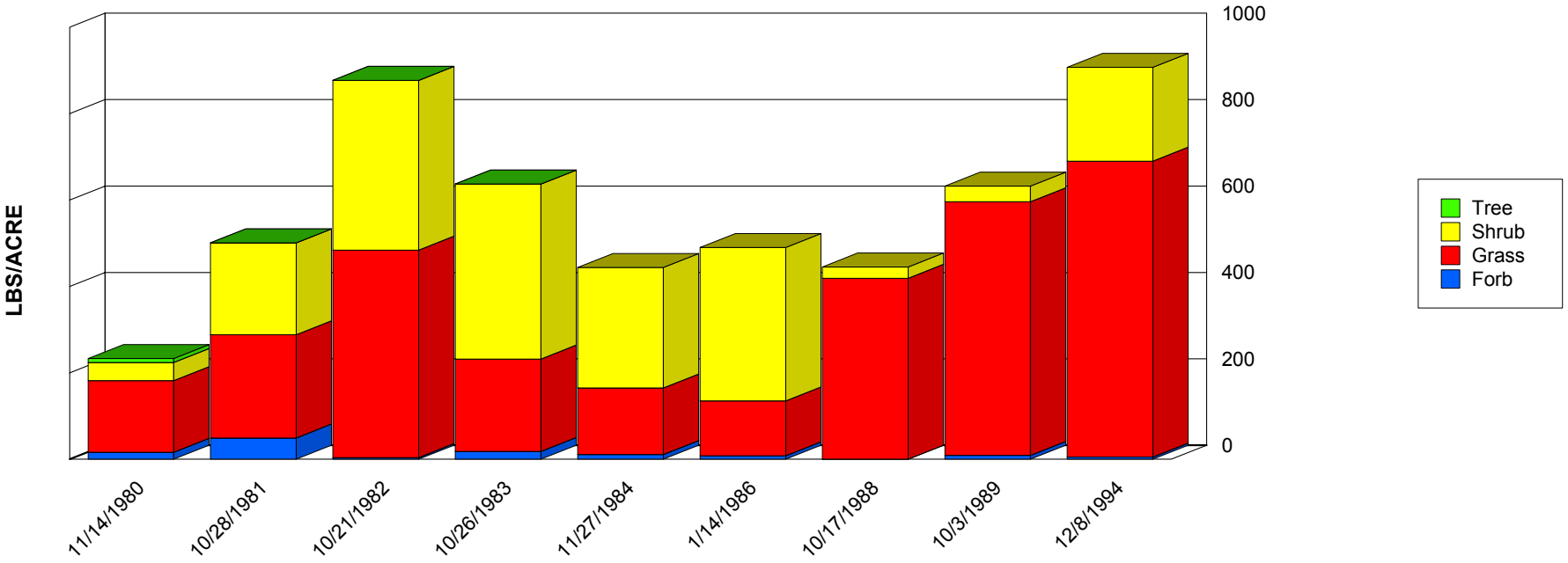
Report Parameters	
SITE NAME LIKE	65020-NORTH MAIN-D048
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001
MIN LBS TO GRAPH	3
SELECTED ECOSITE	070BY054NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
2	Grass	BOCU	11	187	0.00	12.00	2.40	4.80
3	Grass	BOER4	165	187	13.00	176.00	70.67	55.32
3	Grass	BOGR2	165	187	0.00	58.00	19.67	20.39
5	Grass	SPCR	33	55	0.00	149.00	51.56	55.80
8	Grass	MUAR2	0	22	0.00	56.00	18.11	18.64
9	Grass	STNE2	33	55	0.00	7.00	1.17	2.61
10	Grass	ARIST	33	55	0.00	83.00	17.67	24.62
12	Grass	MUPO2	11	55	0.00	95.00	32.13	32.70
13	Grass	HIJA	11	33	0.00	35.00	7.86	13.05
13	Grass	HIMU2	11	33	0.00	233.00	73.63	72.60
16	Grass	PAHA	11	55	0.00	17.00	2.57	5.90
16	Grass	PAOB	11	55	0.00	23.00	9.00	9.67
18	Grass	SCBR2	0	11	0.00	128.00	46.11	34.75
19	Grass	MUAR	11	33	0.00	13.00	3.71	5.57
19	Grass	SPCO4	11	33	0.00	13.00	3.60	5.08
19	Grass	TRPI2	11	33	0.00	1.00	0.14	0.35
21	Grass	ERPU8	0	0	0.00	23.00	4.75	7.07
25	Forb	CROTO	11	33	0.00	6.00	2.83	1.95
25	Forb	CRPO5	11	33	0.00	1.00	0.14	0.35
27	Forb	CHAMA8	33	55	0.00	1.00	0.25	0.43
27	Forb	LESQU	33	55	0.00	13.00	3.14	4.85
27	Forb	MELE2	33	55	0.00	4.00	1.14	1.81
27	Forb	PENA	33	55	0.00	2.00	0.60	0.80
27	Forb	PPFF	33	55	0.00	3.00	0.75	1.30
27	Forb	SOEL	33	55	1.00	4.00	2.50	1.50
27	Forb	SOLAN	33	55	0.00	1.00	0.14	0.35

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
28	Forb	AAFF	33	55	0.00	33.00	5.22	10.17
28	Forb	DIWI	33	55	0.00	3.00	0.43	1.05
28	Forb	XADR	33	55	0.00	0.00	0.00	0.00
30	Shrub	YUCCA	33	55	0.00	3.00	0.60	1.20
30	Tree	YUEL	33	55	0.00	9.00	2.25	3.90
31	Shrub	GUSA2	11	33	0.00	345.00	114.13	119.02
34	Shrub	OPUNT	0	22	0.00	55.00	12.89	15.93
35	Shrub	PRGL2	0	22	0.00	347.00	103.44	114.98
39	Shrub	DAFO	11	33	0.00	3.00	0.43	1.05



Production Lbs/Acre Trends

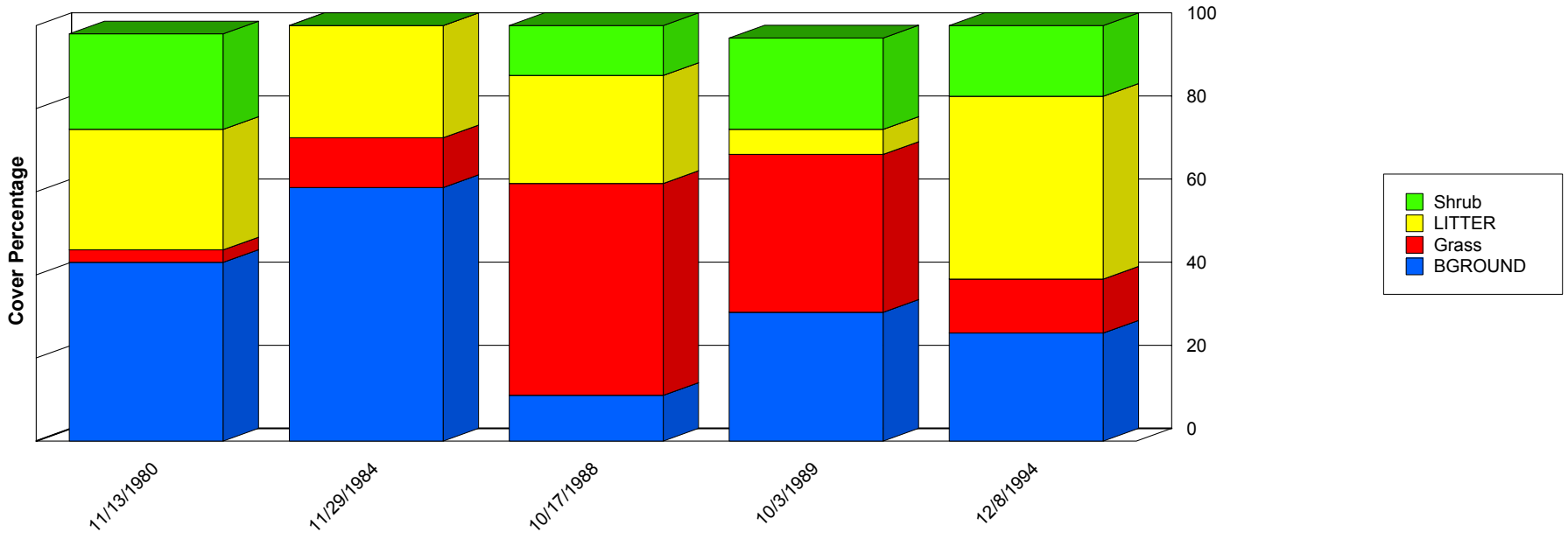


	11/14/1980	10/28/1981	10/21/1982	10/26/1983	11/27/1984	1/14/1986	10/17/1988	10/3/1989	12/8/1994
Forb	**16.00**	**49.00**	**4.00**	**18.00**	**11.00**	**8.00**	**0.00**	**9.00**	**5.00**
Grass	**166.00**	**239.00**	**480.00**	**214.00**	**154.00**	**127.00**	**419.00**	**587.00**	**685.00**
Shrub	**42.00**	**213.00**	**393.00**	**405.00**	**279.00**	**355.00**	**26.00**	**36.00**	**217.00**
Tree	**9.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**233.00**	**501.00**	**877.00**	**637.00**	**444.00**	**490.00**	**445.00**	**632.00**	**907.00**

Report Parameters

SITE NAME LIKE	65020-NORTH MAIN-D048
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Ground Cover Trends



	11/13/1980	11/29/1984	10/17/1988	10/3/1989	12/8/1994
BGROUND	43.00	61.00	11.00	31.00	26.00
Grass	3.00	12.00	51.00	38.00	13.00
LITTER	29.00	27.00	26.00	6.00	44.00
Shrub	23.00	0.00	12.00	22.00	17.00
Total	98.00	100.00	100.00	97.00	100.00

Report Parameters

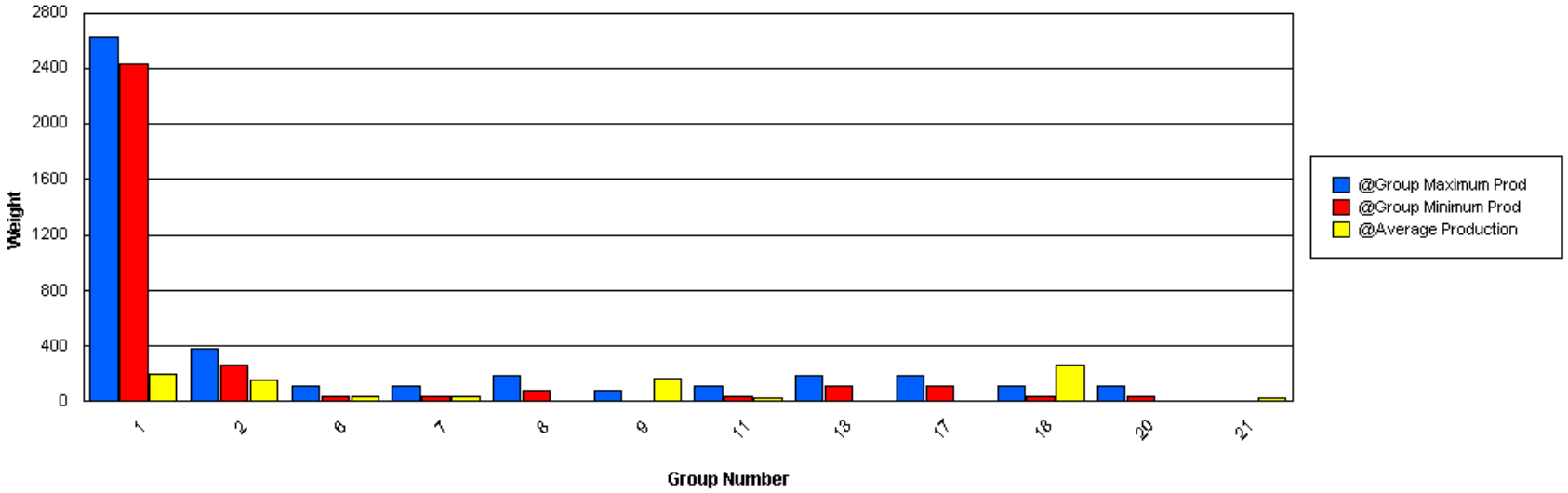
SITE NAME LIKE	65020-RIVER EAST#1-D050
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Functional / Structural Groups

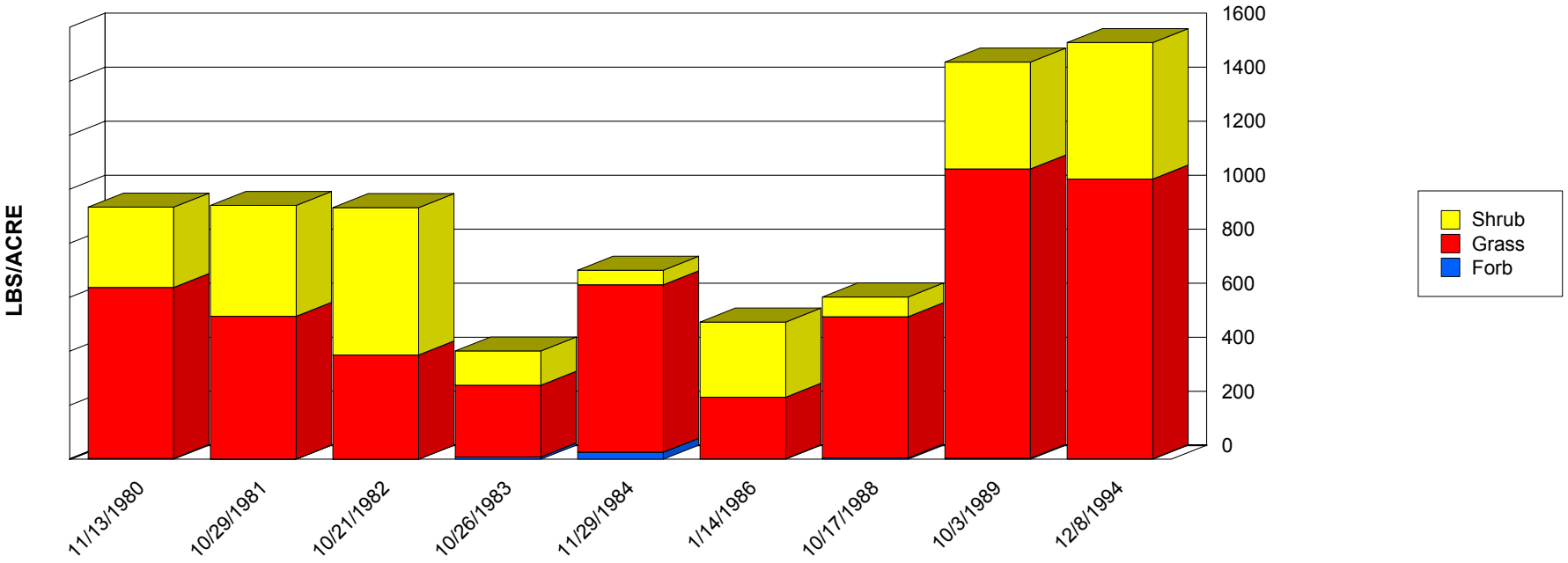
Report Parameters	
SITE NAME LIKE	65020-RIVER EAST#1-D050
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY017NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	SPWR2	2,437	2,625	0.00	463.00	191.78	185.57
2	Grass	HIJA	262	375	0.00	58.00	12.00	20.81
2	Grass	HIMU2	262	375	0.00	339.00	111.38	104.30
2	Grass	SEMA5	262	375	0.00	24.00	4.63	8.14
2	Grass	SPAI	262	375	0.00	80.00	22.00	29.80
3	Grass	PAOB	112	187	0.00	8.00	2.67	3.20
5	Grass	AAGG	0	37	0.00	0.00	0.00	0.00
6	Grass	MUAR	37	112	0.00	149.00	36.78	53.05
7	Grass	MUPO2	37	112	0.00	153.00	35.00	47.75
8	Grass	MURE	75	187	0.00	39.00	6.29	13.47
9	Grass	SCBR2	0	75	74.00	397.00	163.89	97.87
11	Grass	BOER4	37	112	15.00	17.00	16.00	1.00
11	Grass	BOGR2	37	112	0.00	8.00	1.43	2.77
11	Grass	SPCR	37	112	0.00	42.00	12.13	15.16
12	Grass	ERPU8	0	0	0.00	2.00	0.43	0.73
13	Forb	LEMO2	112	187	0.00	2.00	0.50	0.87
13	Forb	LEPID	112	187	0.00	23.00	3.29	8.05
14	Forb	AAFF	75	187	0.00	4.00	1.22	1.23
14	Forb	XADR	75	187	0.00	0.00	0.00	0.00
15	Forb	SOEL	37	112	0.00	5.00	1.00	2.00
15	Forb	SOLAN	37	112	0.00	1.00	0.14	0.35
17	Shrub	ATCA2	112	187	0.00	42.00	7.13	13.36
18	Shrub	PRGL2	37	112	28.00	531.00	261.00	176.21
20	Shrub	OPUNT	37	112	0.00	11.00	6.00	4.55
21	Shrub	GUSA2	0	0	0.00	116.00	29.33	34.86

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

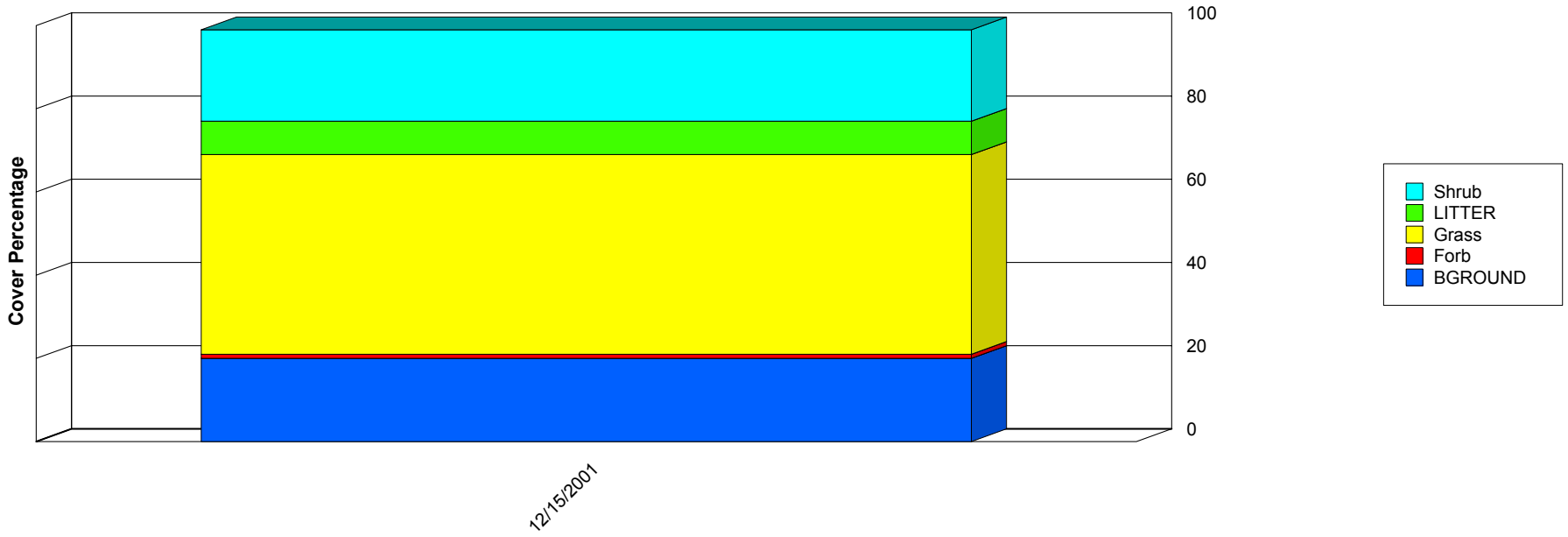


	11/13/1980	10/29/1981	10/21/1982	10/26/1983	11/29/1984	1/14/1986	10/17/1988	10/3/1989	12/8/1994
Forb	**3.00**	**1.00**	**0.00**	**9.00**	**26.00**	**2.00**	**5.00**	**4.00**	**2.00**
Grass	**633.00**	**528.00**	**386.00**	**265.00**	**620.00**	**228.00**	**523.00**	**1,071.00**	**1,036.00**
Shrub	**298.00**	**411.00**	**546.00**	**127.00**	**54.00**	**278.00**	**73.00**	**396.00**	**505.00**
Total	**934.00**	**940.00**	**932.00**	**401.00**	**700.00**	**508.00**	**601.00**	**1,471.00**	**1,543.00**

Report Parameters

SITE NAME LIKE	65020-RIVER EAST#1-D050
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Ground Cover Trends

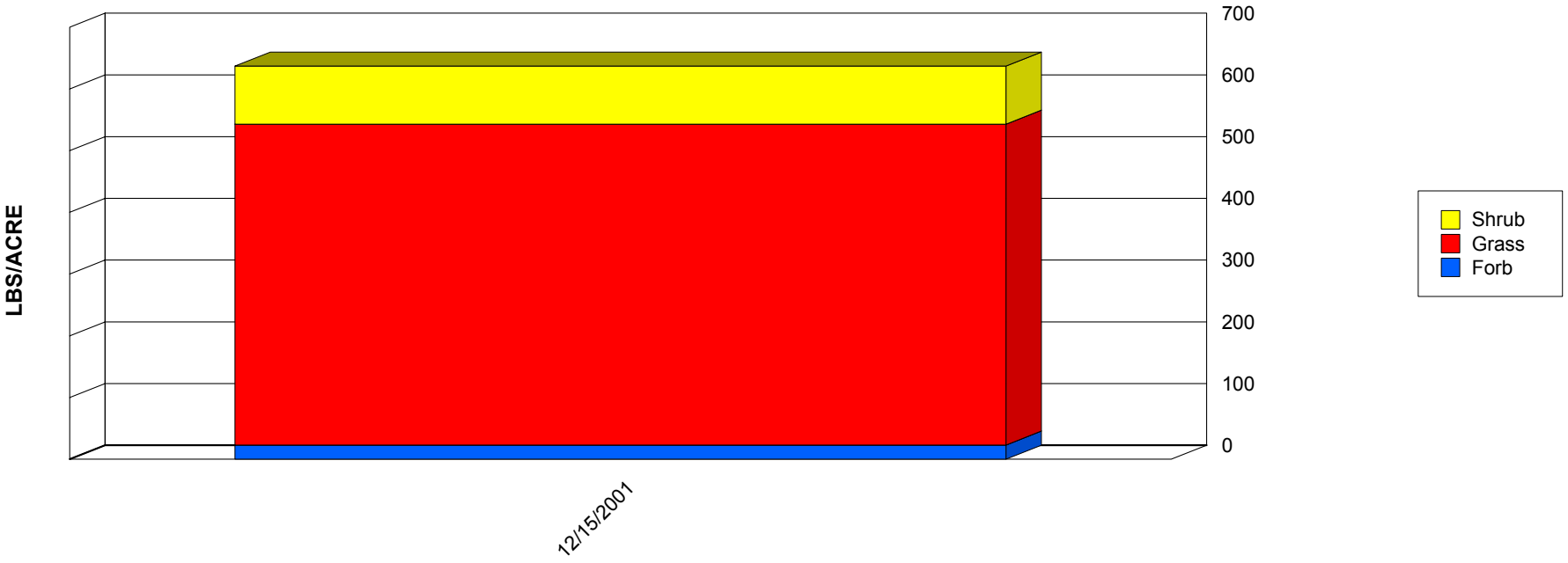


	12/15/2001
BGROUND	20.00
Forb	1.00
Grass	48.00
LITTER	8.00
Shrub	22.00
Total	99.00

Report Parameters

SITE NAME LIKE 65020-RIVER EAST#2 -N021

Production Lbs/Acre Trends

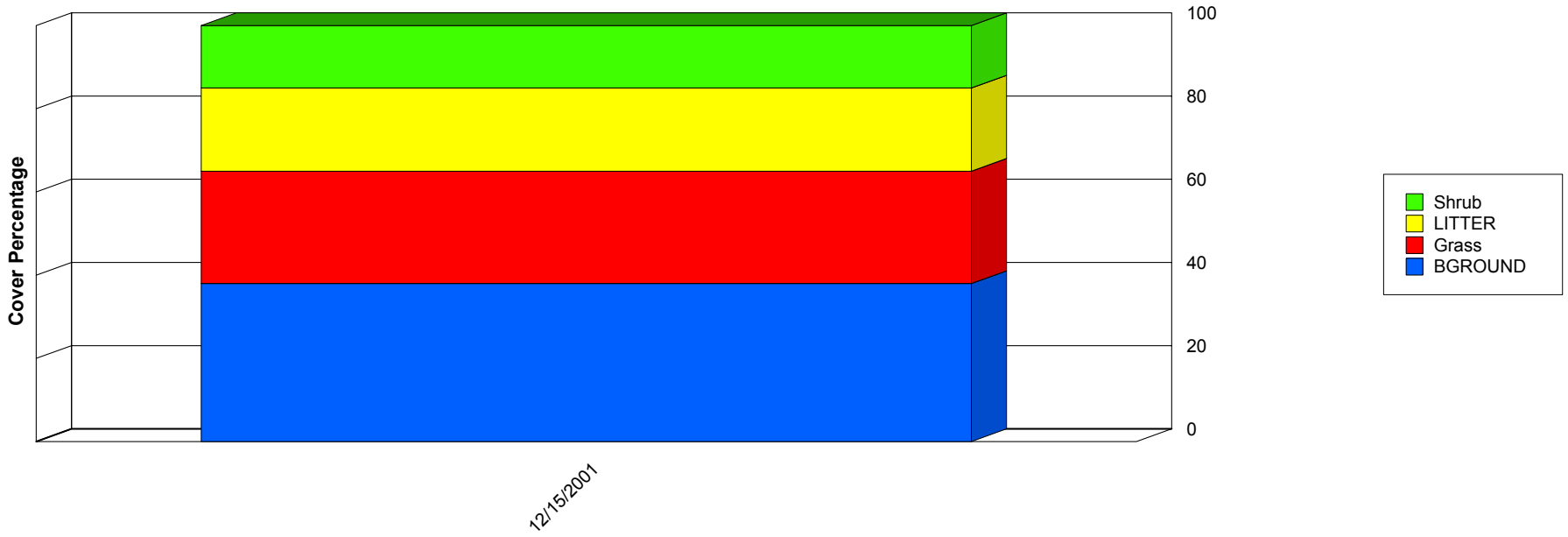


	12/15/2001
Forb	**23.00**
Grass	**520.00**
Shrub	**94.00**
Total	**637.00**

Report Parameters

SITE NAME LIKE 65020-RIVER EAST#2 -N021

Ground Cover Trends

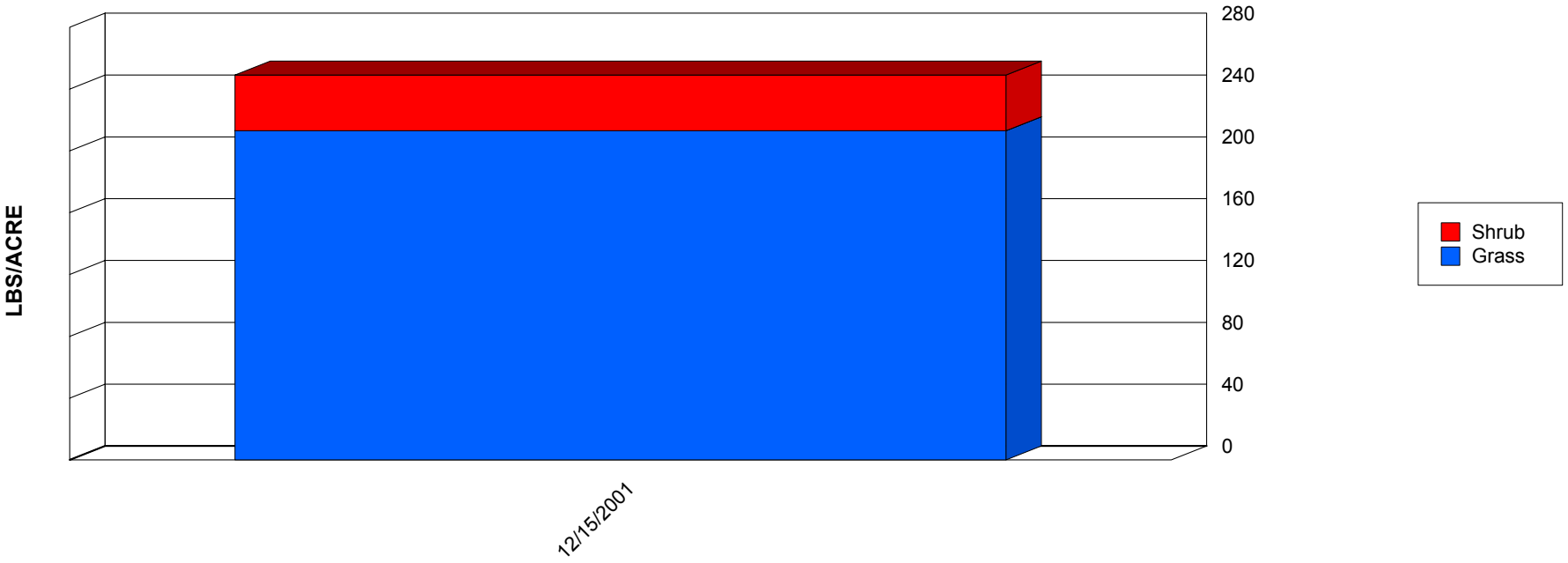


	12/15/2001
BGROUND	38.00
Grass	27.00
LITTER	20.00
Shrub	15.00
Total	100.00

Report Parameters

SITE NAME LIKE	65020-RIVER WEST #2-N023
ON/AFTER	01/01/1982
ON/BEFORE	12/31/2001

Production Lbs/Acre Trends

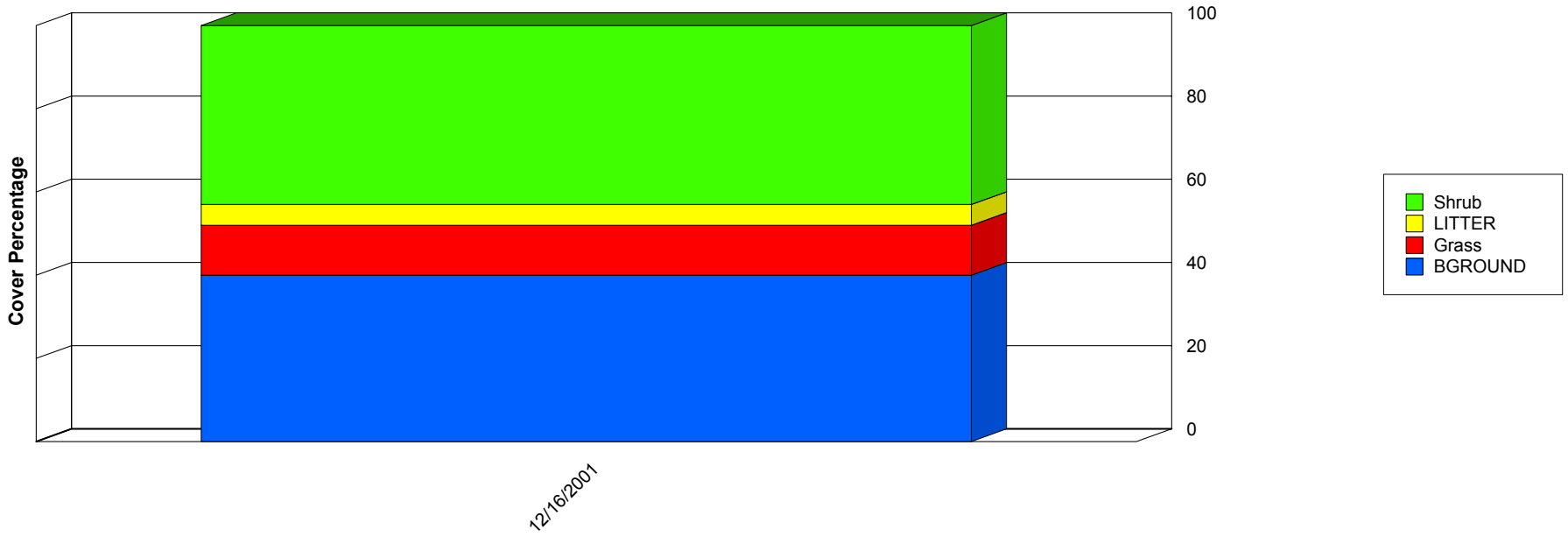


	12/15/2001
Grass	**213.00**
Shrub	**36.00**
Total	**249.00**

Report Parameters

SITE NAME LIKE	65020-RIVER WEST #2-N023
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2002

Ground Cover Trends

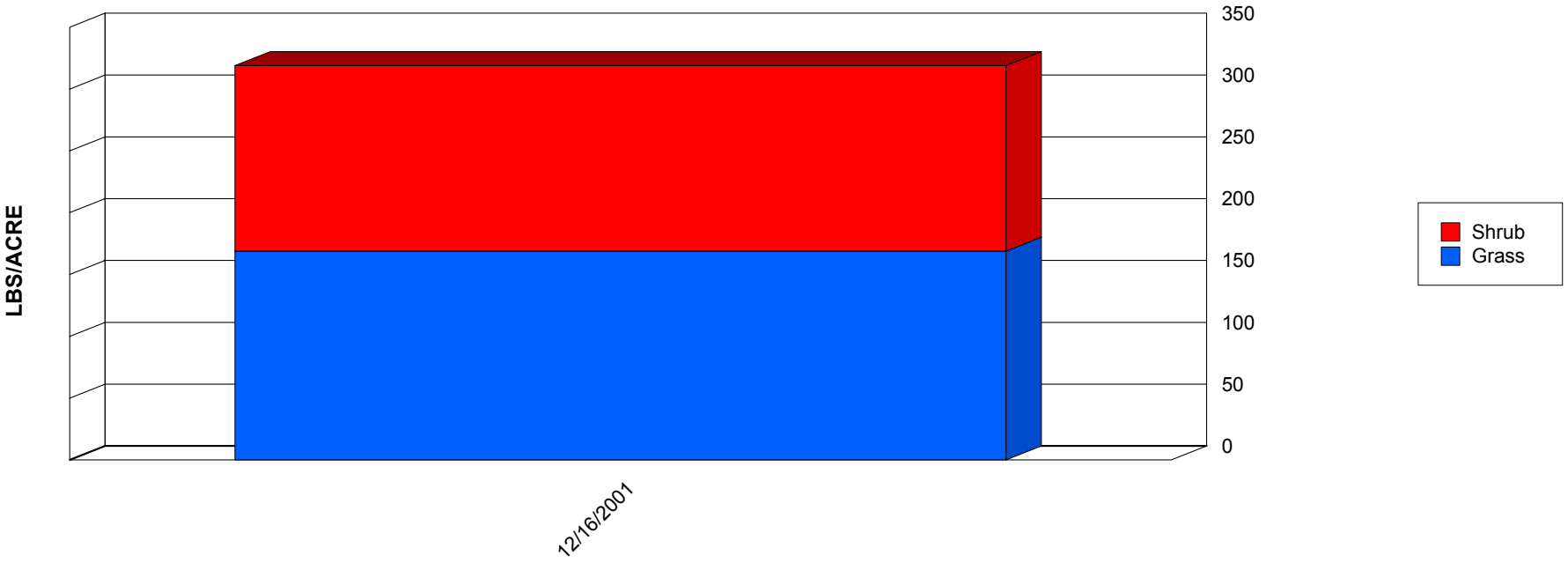


	12/16/2001
BGROUND	40.00
Grass	12.00
LITTER	5.00
Shrub	43.00
Total	100.00

Report Parameters

SITE NAME LIKE 65020-RIVER WEST #3-N024

Production Lbs/Acre Trends

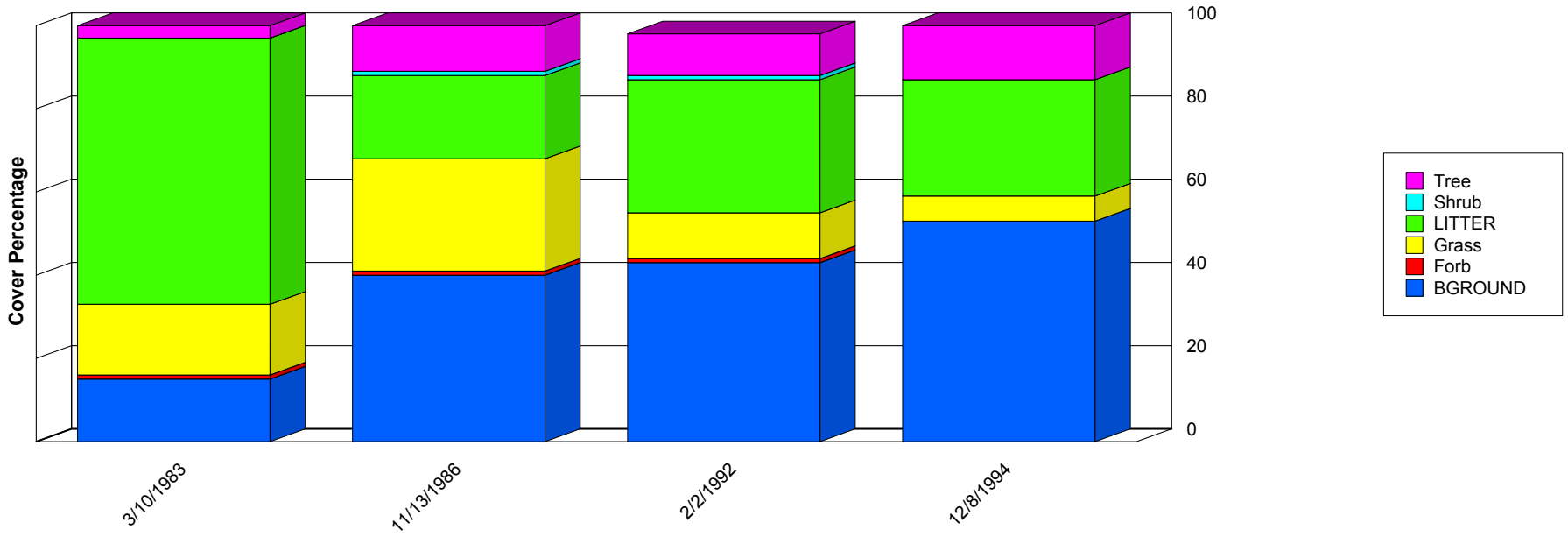


	12/16/2001
Grass	**169.00**
Shrub	**150.00**
Total	**319.00**

Report Parameters

SITE NAME LIKE 65020-RIVER WEST #3-N024

Ground Cover Trends



	3/10/1983	11/13/1986	2/2/1992	12/8/1994
BGROUND	15.00	40.00	43.00	53.00
Forb	1.00	1.00	1.00	0.00
Grass	17.00	27.00	11.00	6.00
LITTER	64.00	20.00	32.00	28.00
Shrub	0.00	1.00	1.00	0.00
Tree	3.00	11.00	10.00	13.00
Total	100.00	100.00	98.00	100.00

Report Parameters

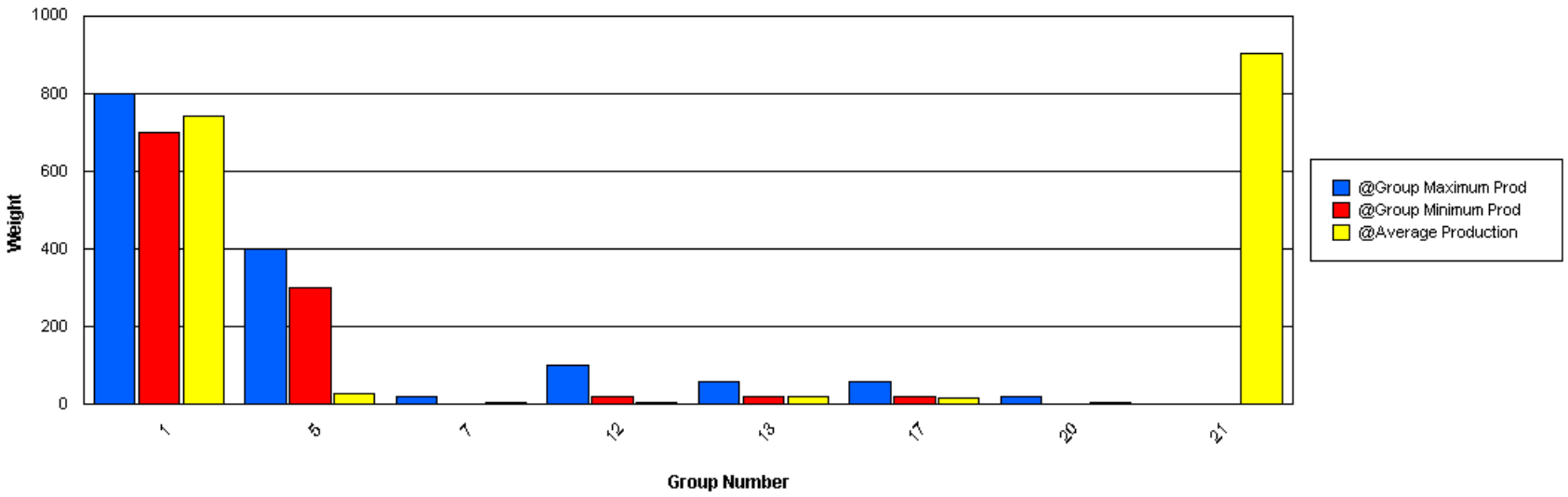
SITE NAME LIKE	65020-RIVER WEST#1 -F216
ON/AFTER	01/01/1982
ON/BEFORE	12/31/2001

Functional / Structural Groups

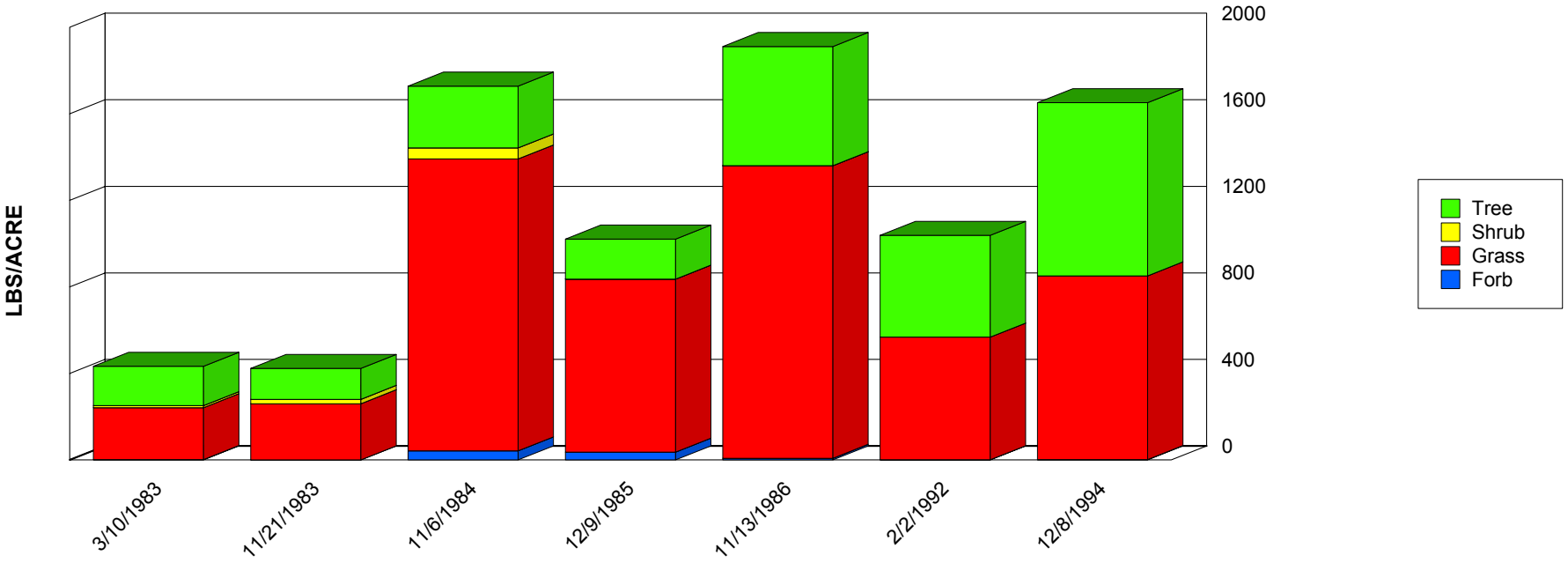
Report Parameters	
SITE NAME LIKE	65020-RIVER WEST#1 -F216
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY033NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	SPAI	700	800	225.00	1,352.00	743.00	431.19
5	Grass	DIST	300	400	0.00	59.00	27.57	19.78
7	Grass	CEPA7	0	20	0.00	13.00	4.33	6.13
12	Forb	AAFF	20	100	1.00	11.00	4.80	3.97
13	Forb	AMBRO	20	60	0.00	25.00	5.40	9.83
13	Forb	AMPS	20	60	0.00	27.00	9.00	12.73
13	Forb	LEMO2	20	60	0.00	13.00	4.33	6.13
17	Shrub	PRGL2	20	60	0.00	47.00	15.67	22.16
20	Shrub	HAPLO2	0	20	0.00	20.00	6.00	7.38
21	Shrub	GUSA2	0	0	0.00	3.00	0.60	1.20
21	Tree	TAPE	0	0	470.00	800.00	635.00	165.00
21	Tree	TARA	0	0	143.00	551.00	269.40	148.53

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

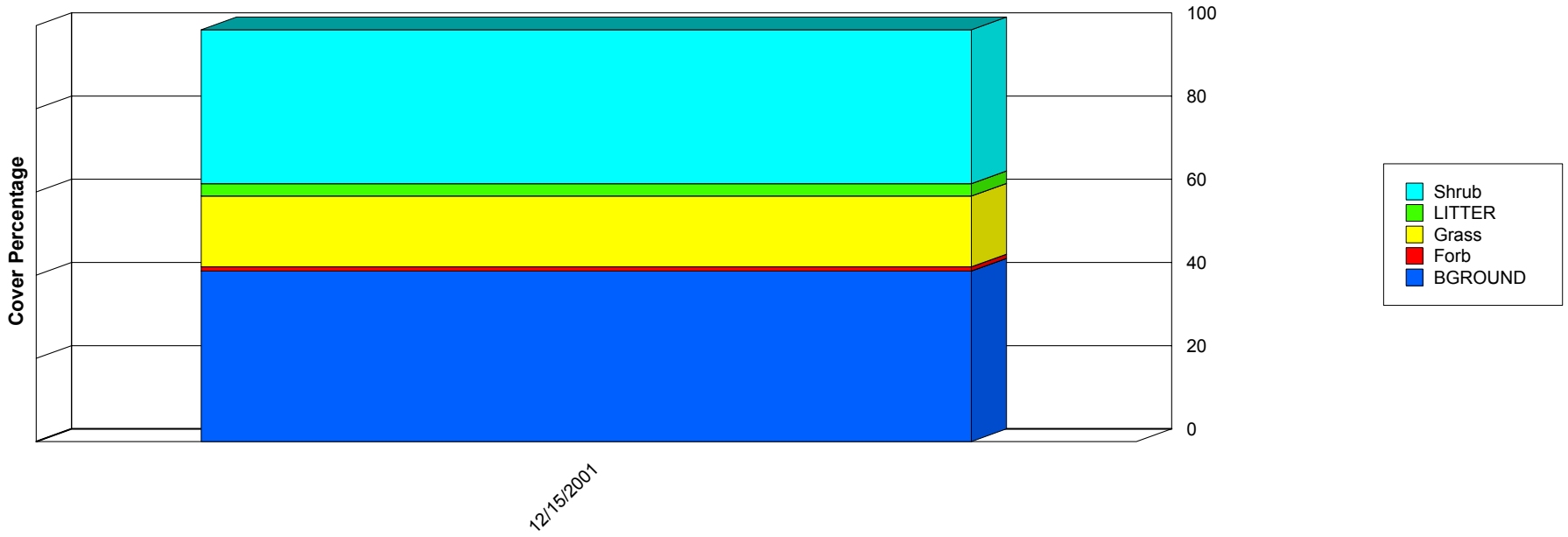


	3/10/1983	11/21/1983	11/6/1984	12/9/1985	11/13/1986	2/2/1992	12/8/1994
Forb	**2.00**	**0.00**	**42.00**	**36.00**	**8.00**	**1.00**	**2.00**
Grass	**240.00**	**260.00**	**1,349.00**	**800.00**	**1,352.00**	**567.00**	**849.00**
Shrub	**9.00**	**20.00**	**51.00**	**0.00**	**0.00**	**0.00**	**0.00**
Tree	**182.00**	**143.00**	**286.00**	**185.00**	**551.00**	**470.00**	**800.00**
Total	**433.00**	**423.00**	**1,728.00**	**1,021.00**	**1,911.00**	**1,038.00**	**1,651.00**

Report Parameters

SITE NAME LIKE	65020-RIVER WEST#1 -F216
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2001

Ground Cover Trends

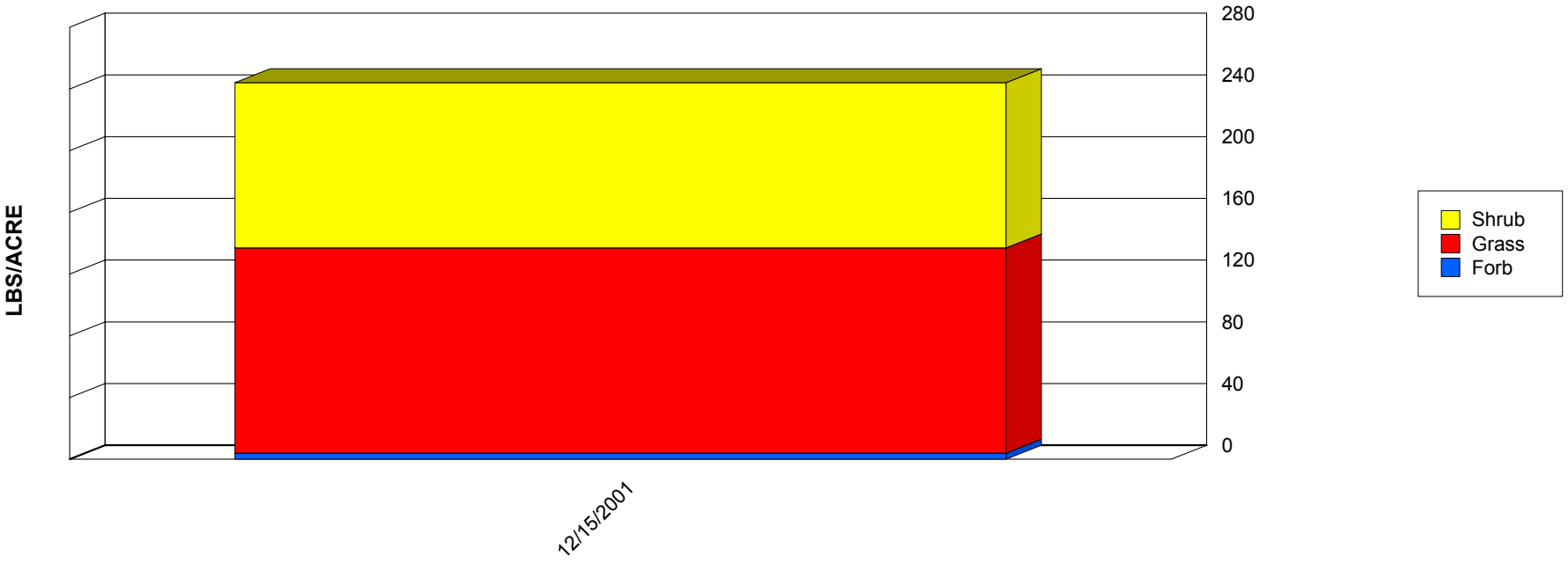


	12/15/2001
BGROUND	41.00
Forb	1.00
Grass	17.00
LITTER	3.00
Shrub	37.00
Total	99.00

Report Parameters

SITE NAME LIKE 65020-SOUTH MAIN-N022

Production Lbs/Acre Trends

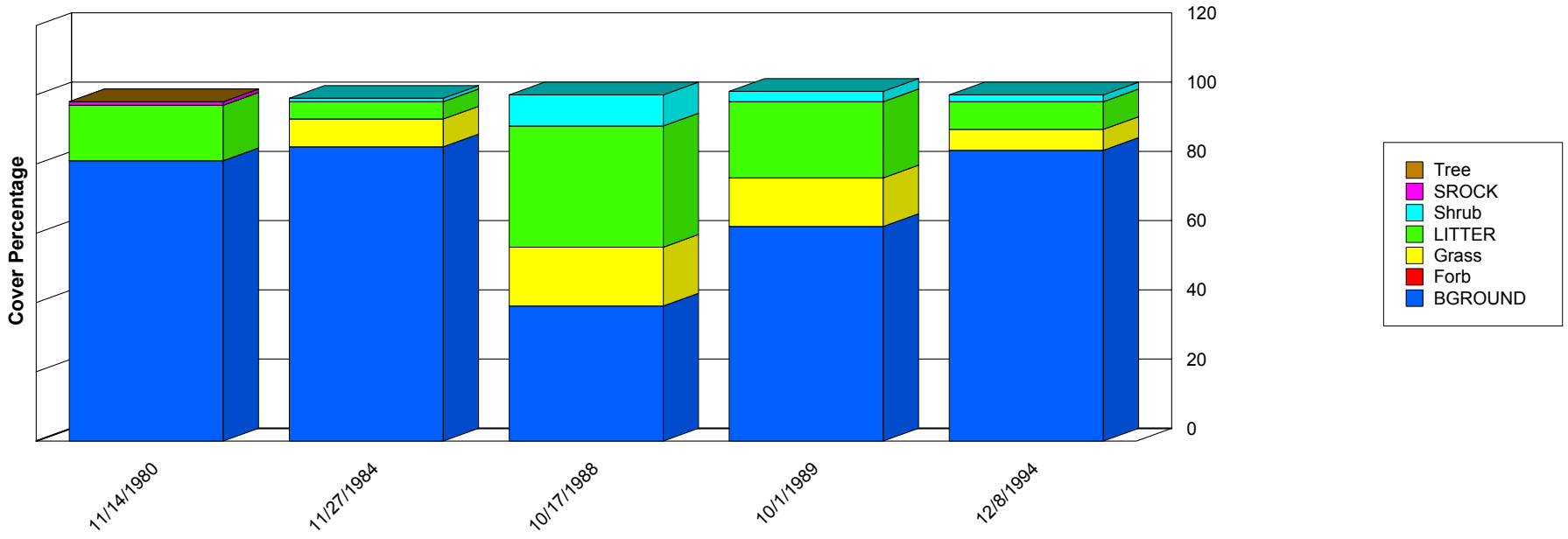


	12/15/2001
Forb	**4.00**
Grass	**133.00**
Shrub	**107.00**
Total	**244.00**

Report Parameters

SITE NAME LIKE 65020-SOUTH MAIN-N022

Ground Cover Trends



	11/14/1980	11/27/1984	10/17/1988	10/1/1989	12/8/1994
BGROUND	81.00	85.00	39.00	62.00	84.00
Forb	0.00	0.00	0.00	0.00	0.00
Grass	0.00	8.00	17.00	14.00	6.00
LITTER	16.00	5.00	35.00	22.00	8.00
Shrub	0.00	1.00	9.00	3.00	2.00
SROCK	1.00	0.00	0.00	0.00	0.00
Tree	0.00	0.00	0.00	0.00	0.00
Total	98.00	99.00	100.00	101.00	100.00

Report Parameters

SITE NAME LIKE	65020-WHISKEY-D049
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

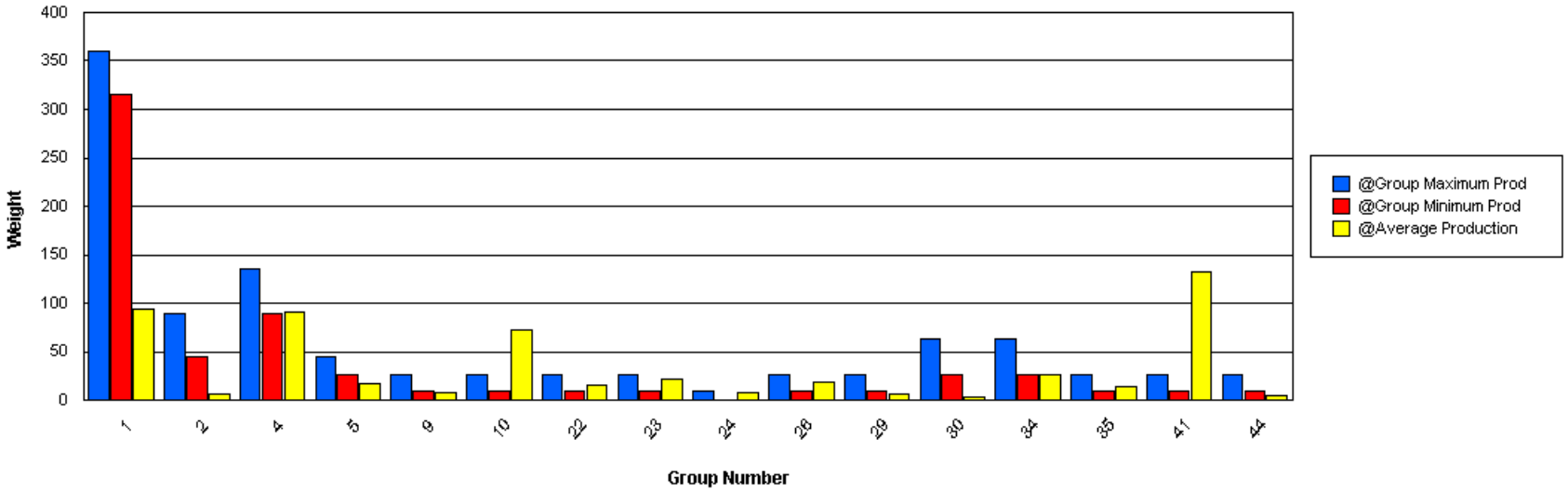
Functional / Structural Groups

Report Parameters

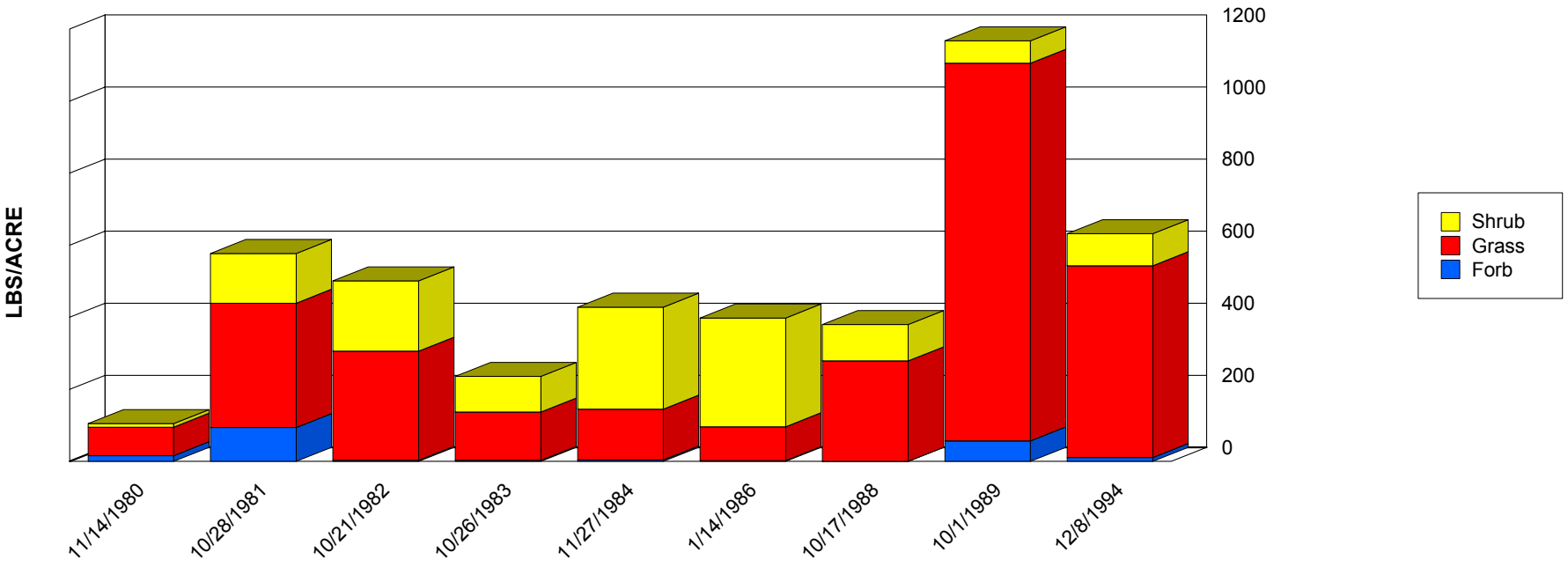
SITE NAME LIKE	65020-WHISKEY-D049
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001
MIN LBS TO GRAPH	3
SELECTED ECOSITE	042CY004NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	315	360	9.00	352.00	93.56	113.69
2	Grass	BOGR2	45	90	0.00	33.00	7.25	11.08
4	Grass	SPCO4	90	135	0.00	32.00	8.60	12.45
4	Grass	SPCR	90	135	12.00	266.00	82.67	92.52
5	Grass	ARIST	27	45	0.00	69.00	16.56	24.32
9	Grass	PAOB	9	27	0.00	45.00	8.50	14.63
10	Grass	HIJA	9	27	0.00	51.00	10.00	17.98
10	Grass	HIMU2	9	27	0.00	146.00	63.25	51.02
22	Grass	MUAR	9	27	7.00	24.00	15.50	8.50
23	Grass	MUAR2	9	27	0.00	95.00	21.78	32.41
24	Grass	PAHA	0	9	0.00	40.00	8.00	16.00
26	Grass	SCBR2	9	27	0.00	67.00	18.22	19.11
28	Grass	STNE2	9	27	0.00	6.00	1.00	2.24
29	Grass	ERPU8	9	27	0.00	13.00	4.80	4.45
29	Grass	TRPI2	9	27	1.00	1.00	1.00	0.00
30	Forb	CROTO	27	63	1.00	7.00	3.60	2.15
32	Forb	LESQU	27	63	0.00	8.00	1.71	2.71
34	Forb	AAFF	27	63	0.00	15.00	3.67	5.01
34	Forb	PECTI	27	63	0.00	70.00	23.33	33.00
34	Forb	XADR	27	63	0.00	1.00	0.14	0.35
35	Forb	CHAMA8	9	27	0.00	1.00	0.25	0.43
35	Forb	PENA	9	27	0.00	3.00	1.00	1.22
35	Forb	PPFF	9	27	0.00	23.00	4.00	8.50
35	Forb	SOEL	9	27	1.00	24.00	8.67	10.84
39	Shrub	ATCA2	9	27	0.00	16.00	2.38	5.24
41	Shrub	GUSA2	9	27	2.00	302.00	133.11	99.54

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
44	Shrub	PRGL2	9	27	0.00	31.00	5.56	9.41



Production Lbs/Acre Trends

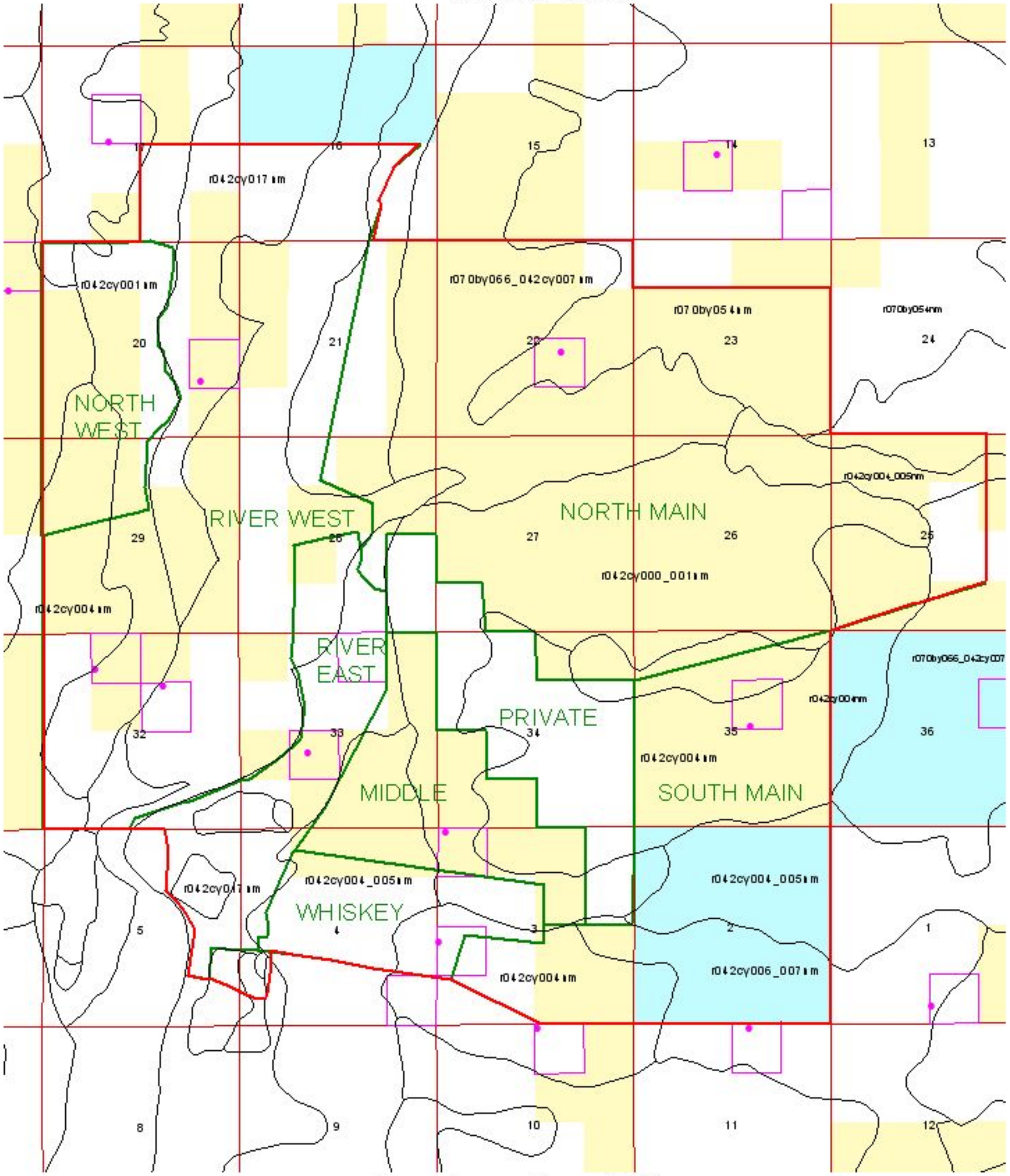


	11/14/1980	10/28/1981	10/21/1982	10/26/1983	11/27/1984	1/14/1986	10/17/1988	10/1/1989	12/8/1994
Forb	**16.00**	**94.00**	**3.00**	**3.00**	**4.00**	**2.00**	**0.00**	**57.00**	**11.00**
Grass	**79.00**	**345.00**	**303.00**	**134.00**	**141.00**	**94.00**	**279.00**	**1,048.00**	**532.00**
Shrub	**10.00**	**138.00**	**195.00**	**99.00**	**283.00**	**302.00**	**101.00**	**62.00**	**89.00**
Total	**105.00**	**577.00**	**501.00**	**236.00**	**428.00**	**398.00**	**380.00**	**1,167.00**	**632.00**

Report Parameters

SITE NAME LIKE	65020-WHISKEY-D049
ON/AFTER	10/01/1979
ON/BEFORE	09/30/2001

Rangeland Health Assessment
Ecological Sites
Allotment - 65020



Study Plots
40 Acres

Study Locations

Allotment Boundary

Pasture Boundary

Ecological Site Boundary

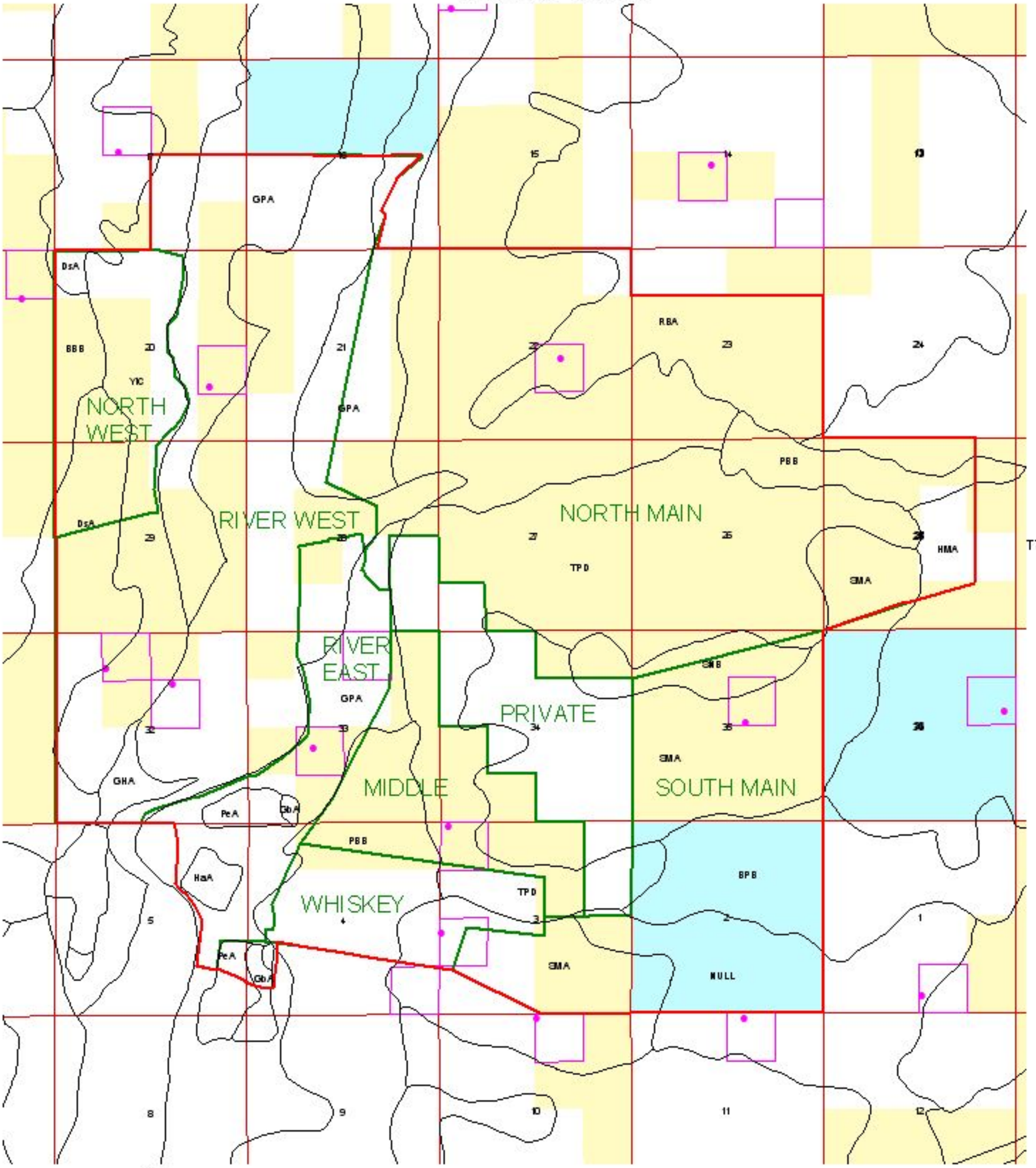
State

Private

Public

Produced by the Roswell Field Office
GIS Specialist on May 14, 2003.

Rangeland Health Assessment
Soil Mapping Units
Allotment - 65020



0.3 0 0.3 0.6 Miles

Study Plots
40 Acres

Study Locations

State | Private | Public

Allotment Boundary

Pasture Boundary

Soil Mapping Units

Produced by the Roswell Field Office
GIS Specialist on May 14, 2003.